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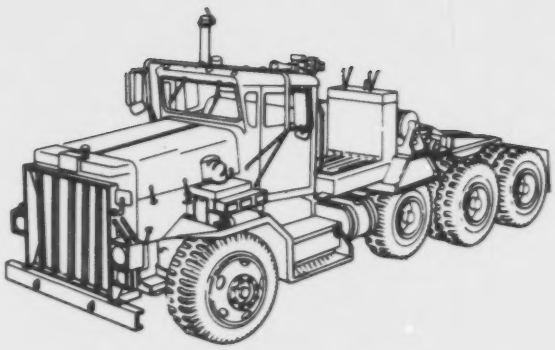
OPERATOR'S MANUAL



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TRUCK TRACTOR, COMMERCIAL HEAVY EQUIPMENT TRANSPORTER (C-HET), 85,000 GVWR, 8 x 6, M911 (NSN 2320-01-025-3733)

This copy is a reprint which includes current pages from Changes 1 and 2.

HEADQUARTERS, DEPARTMENT OF THE ARMY

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TM 9-2320-270-10
C2

CHANGE

No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 15 September 1989

Operator's Manual

TRUCK, TRACTOR, COMMERCIAL HEAVY EQUIPMENT TRANSPORTER (C-HET), 85,000 GVWR, 8X6, M911 (NSN 2320-01-025-3733)

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CARL E. VUONO
General United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General United States Army
The Adjutant General

Distribution:
To be distributed in accordance with DA Form 12-38, Operator, maintenance requirements for Truck, Tractor, Commercial Heavy Equipment Transporter (C-HET) 85,000 GVWR, 8x6, M911.

TM 9-2320-270-10
C1

CHANGE
No.1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *13 Jun 86*

OPERATORS MANUAL

TRUCK/TRACTOR, COMMERCIAL HEAVY EQUIPMENT TRANSPORTER (C-HET), 85,000 GVWR, 8X6, M911 (NSN 2320-01-025-3733)

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JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-38, Operator Requirements for Truck, Tractor, Commercial Heavy Equipment Transporter, C-HET, 85,000 GVWR, 8X6 M911.

WARNING

CARBON MONOXIDE (EXHAUST GAS) CAN KILL YOU

Carbon monoxide is without color or smell, but can kill you. Breathing air with carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Brain damage or death can result from heavy exposure. Carbon monoxide occurs in the exhaust fumes of internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of no air movement. Precautions must be followed when the engine is operated for any purpose.

1. DO NOT operate engine of vehicle in a closed place unless the place has a lot of moving air.

2. DO NOT idle engine for long periods without a lot of moving air flowing through driver's cab.

3. DO NOT drive any vehicle with inspection plates, cover plates, or engine compartment doors removed unless necessary for maintenance.

4. BE ALERT at all times during vehicle operation for exhaust odors and exposure symptoms, of headache, dizziness, loss of muscular control, or coma. If either are present, IMMEDIATELY AIR OUT the driver's cab. If symptoms persist, remove affected personnel to fresh air; keep warm; DO NOT PERMIT PHYSICAL EXERCISE; if necessary, give artificial respiration and get immediate medical attention. Refer to FM 20-11 for artificial respiration techniques.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS FRESH MOVING AIR.

WARNING

FLAMMABLE DRY CLEANING SOLVENT

Dry cleaning solvent is flammable. Do not use near open flame or high temperatures. Flash point temperature is 138°F (59°C). Injury to personnel and damage to equipment may result.

WARNING

HOT HYDRAULIC FLUID

Hydraulic fluid heats under use and expands when heated. Hot fluid can cause serious injury to personnel. Remove cap slowly.

WARNING

HOT HUBS, DRUMS, AXLES, DIFFERENTIALS, AND TRANSFER CASE

Hubs, drums, axles, differentials, and transfer case may be very hot after operation. Do not check them with your bare hands. Injury may result.

WARNING

OPERATION WITH LOW AIR PRESSURE

Do not move vehicle until low air pressure warning light and buzzer go off and pressure gage shows 80 psi (552 kPa) or more. Approximately 60 psi (414 kPa) is needed to release the brakes. Normal air pressure for driving is 90 to 120 psi (615 to 820 kPa). Damage to equipment and injury to personnel could result from driving with low air pressure.

WARNING

PARKING ON A STEEP GRADE

This vehicle should not be parked on a steep grade. If situation requires that the vehicle be parked on a steep grade, block the wheels and set parking brake.

WARNING

PANEL LIGHTS IN BLACKOUT CONDITION

Do not use panel lights in blackout light conditions.
Do not touch blackout light switch. Leave it in off mode.

WARNING

SNAPPED WINCH CABLE OR SHIFTING PAYLOAD

All personnel not involved in winching operations will stand clear of winch cables and payload. A snapped cable or shifting payload can cause serious injury or death. If payload shifts and presents a hazard, or if any component fails, stop winching operation immediately and notify organizational maintenance.

WARNING

CAB AND WINCH OPERATOR'S STATION NOISE LEVEL

Use proper ear protection (ear plugs) at cab and winch operator's station during winching. Noise level may cause permanent ear damage and loss of hearing.

WARNING

BROKEN AND FRAYED WINCH CABLES

Always wear heavy gloves when you handle winch cables. NEVER allow cable to run through your hands. Broken and frayed wires can cause painful hand injuries.

WARNING

DECONTAMINATION APPARATUS MISTAKEN FOR FIRE EXTINGUISHER

The M11 decontamination apparatus looks like a fire extinguisher. The DS2 agent in the apparatus is flammable, and if used on a fire by mistake could cause serious injury to personnel and damage to equipment.

WARNING

AN ALREADY USED FIRE EXTINGUISHER

A used fire extinguisher may not have enough of its contents left to stop a fire from causing severe injury to personnel and damage to equipment.

WARNING

INCORRECT BATTERY JUMPER CABLE HOOK-UP

Incorrect battery jumper cable hook-up will cause arcing and possible battery explosion, personnel injury, and equipment damage.

WARNING

BLOCKING WHEELS BEFORE RELEASING SPRING BRAKES

Failure to block wheels before releasing the spring brakes could result in vehicle runaway, causing injury to personnel and damage to equipment.

WARNING

REMOVING HOT RADIATOR CAP

Do not remove radiator cap from a hot engine. Hot radiator fluid can cause serious burns to personnel.

WARNING

FUEL IS EXTREMELY FLAMMABLE

Fuel is extremely flammable. Do not smoke or allow open flame nearby when filling the fuel tanks. Failure to observe safety instructions could cause serious injury to personnel and damage to equipment.

WARNING

STATIC SPARK WHEN FILLING FUEL TANKS

Be sure that nozzle or container contacts fuel tank filler tube on fuel tank to carry off static electricity. Failure to ground nozzle may cause static spark that could ignite fuel and cause serious injury to personnel and damage to equipment.

WARNING

SPARE TIRE HOIST RUNAWAY

Do not release drum locking lever until you have a firm grip on hoist handle if there is a load on the cable. There is no braking mechanism on some drums for lowering a load. A falling wheel and tire assembly may cause injury to personnel and damage to equipment.

WARNING

STANDING UNDER HOIST DURING OPERATION

Do not allow anyone to stand directly under wheel and tire assembly while it is on the hoist. A runaway hoist or falling wheel and tire assembly may cause serious injury to personnel.

WARNING

VEHICLE JACKED BUT NOT SUPPORTED

The hydraulic jack is intended for lifting the truck, not for supporting the vehicle after it is raised. Do not get under the M911 Truck Tractor after it is raised unless it is properly supported with safety stands or blocks. Failure to observe this warning can result in serious injury.

WARNING

LEAD ACID BATTERY GASES

Lead-acid battery gases can explode. Do not smoke, have battery near open flames, or make sparks around a battery, especially, if the caps are off. If a battery is gassing, it can explode and cause personal injury.

WARNING

BATTERY ACID

If acid contacts the eyes, skin, or clothing, flush immediately with large amounts of cold water. In the event of eye or skin contact, see a physician immediately.

WARNING

If your vehicle is to be towed, apply parking brake and place chocks in front of wheels prior to hook-up of tow bar and prior to disconnecting tow bar. Work between wrecker or towing vehicle and the disabled vehicle with extreme care. Vehicles having air actuated spring brakes and an inactive air system, uncage the spring brakes before the vehicle is separated from the towing vehicle. Failure to follow this warning may result in serious injury or death.

TECHNICAL MANUAL
NO. 9-2320-270-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 2 December 1983

OPERATORS MANUAL
TRUCK TRACTOR, COMMERCIAL HEAVY EQUIPMENT TRANSPORTER (C-HET) 85,000 GVWR, 8X6, M911 (NSN 2320-01-025-3733)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Tank-Automotive Command, ATTN: DRSTA-MB , Warren, MI 48090. A reply will be furnished to you.

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*This manual supersedes TM 9-2320-270-10 dated 20 October 1977.

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HOW TO USE THIS MANUAL

OVERVIEW

This manual is designed to help you operate and maintain the M911 Truck Tractor. Special features of this manual that have been added to help you locate and use the information in it are listed below.

Front cover tabbed index of often needed portions of the manual is included to give quick access to information.

Cautions are underlined and warnings have a line over and under the heading to highlight their importance. Read and follow all warnings and cautions. Example below:

CAUTION

An engine running with low or no oil will cause serious engine damage. Shut it off immediately.

WARNING

Do not permit anyone to stand directly between the M911 Truck Tractor and semi-trailer during the coupling procedure. Failure to follow this warning can result in injury to personnel.

SAMPLE PROBLEM

During operation or PMCS you found that the engine would not crank. Quickly go to cover of manual and find the troubleshooting index tab, or to the table of contents. Turn to trouble-shooting and find the symptom index. Look for the problem. The page number next to "Engine fails to crank" will take you to the troubleshooting procedure. Step 2 of "ENGINE FAILS TO CRANK" is "Check IGN START circuit breaker (2)". If out, reset and try to start. You reset the circuit breaker and the engine starts. Continue your mission.

CHAPTER 1

INTRODUCTION

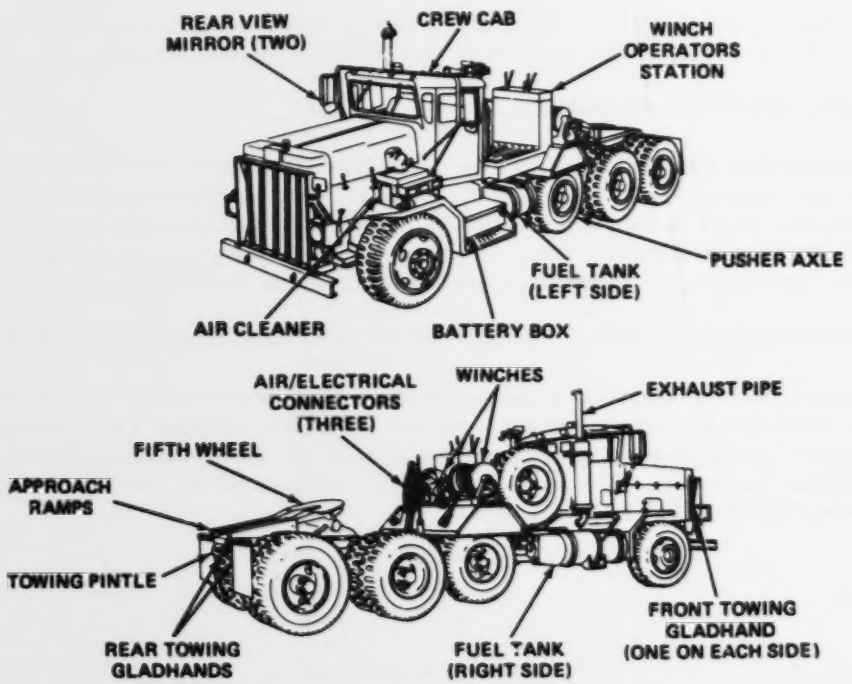
OVERVIEW

The purpose of this chapter is to give you information that you need to know as an operator of the M911 Truck Tractor.

		Page
Section I.	GENERAL INFORMATION	1-1
Section II.	EQUIPMENT DESCRIPTION	1-5

Section I. GENERAL INFORMATION

The following shows you some of the features and components of the Truck Tractor, Commercial, Heavy Equipment Transporter (C-HET), M911. Throughout this manual it will be referred to as the M911 Truck Tractor.



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GENERAL

This section gives you required information on what forms are needed to report any problems, an equipment inventory checklist reference, and a list of abbreviations and terms that are used in this manual.

	Page		Page
Hand Receipt (-HR) Manuals	1-2	Reporting Equipment Improvement Recommendations (EIR's)	1-2
List of Abbreviations and Glossary	1-3	Scope	1-2
Maintenance Forms and Records	1-2	Warranty Information	1-3

SCOPE

This operator's manual is for use in operating and maintaining the M911 Truck Tractor, Commercial Heavy Equipment Transporter. The purpose of the M911 Truck Tractor is to serve as a prime mover for the heavy equipment transporter (HET) semitrailer.

MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System (TAMMS).

HAND RECEIPT (-HR) MANUALS

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 9-2320-270-10-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII and AAL) for which you must account. As an aid to property accountability, additional -HR manuals may be requisitioned from: Commander, U.S. Army Publications Center, 2800 Easter Blvd, Baltimore, MD 21220.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR's)

If your M911 Truck Tractor needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to: Commander, U.S. Army Tank Automotive Command, ATTN: DRSTA-MB , Warren, MI 48090. We'll send you a reply.

WARRANTY INFORMATION

Refer to TB 9-2300-295-15/15 for the M911 Truck Tractor warranty information and data.

LIST OF ABBREVIATIONS

AAL	Additional Authorization List
BII	Basic Issue Items
°C	degrees Celsius
cm	centimeter
C-HET	Commercial-Heavy Equipment Transporter
COEI	Component of End Item
CTA	Common Table of Allowance
cu ft	cubic feet
DA	Department of the Army
EIR	Equipment Improvement Report
°F	degrees Fahrenheit
FSCM	Federal Supply Code for Manufacturers
ft	feet
gal.	gallon
GCWR	Gross Combination Weight Rating
GVWR	Gross Vehicle Weight Rating
HP	Horsepower
hr	hour
in.	inch
JTA	Joint Table of Allowance
kg	kilograms
km	kilometers
km/h	kilometers per hour
kPa	kiloPascals
lb	pound
LPS	lamps
m	meter
Mg	Megagram
mi	mile
MI	Michigan
mm	millimeter
MTOE	Modified Table of Organization and Equipment
oz	ounce
PAM	pamphlet
PMCS	Preventive Maintenance Checks and Services
pt	pint
qt	quart
rad	radian
rpm	revolutions per minute

LIST OF ABBREVIATIONS – CONTINUED

rqr	require
SB	Supply Bulletin
SF	Standard Form
TDA	Table of Distribution and Allowances
TOE	Table of Organization and Equipment
U/M	Unit of Measure
v	volt

GLOSSARY

Apparatus	Bottle that holds decontamination agent DS2
Ball chuck	End of tire inflation hose that goes on the tire valve stem for adding air
Electrolyte	Battery acid
Fifth wheel	The platform on the M911 Truck Tractor that the semi-trailer rests on, and to which the king pin is coupled
Gladhand	Coupling for connecting air brake hoses
Gooseneck	Curved portion of upper forward end of a semitrailer
Quickstart	Cold weather ether starting aid

Section II. EQUIPMENT DESCRIPTION

GENERAL

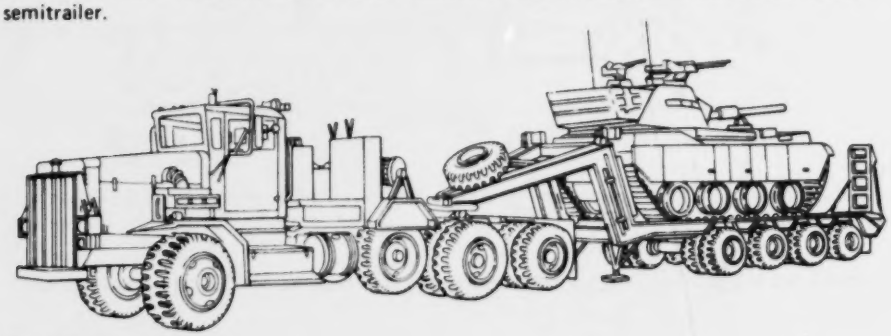
The purpose of this section is to show you what the M911 Truck Tractor is capable of doing during daily equipment operation. In addition, information is provided to show the special features of the M911 Truck Tractor.

	Page		Page
Equipment Characteristics, Capabilities, and Features	1-5	Location and Description of Major Components	1-10
Equipment Data	1-20		

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

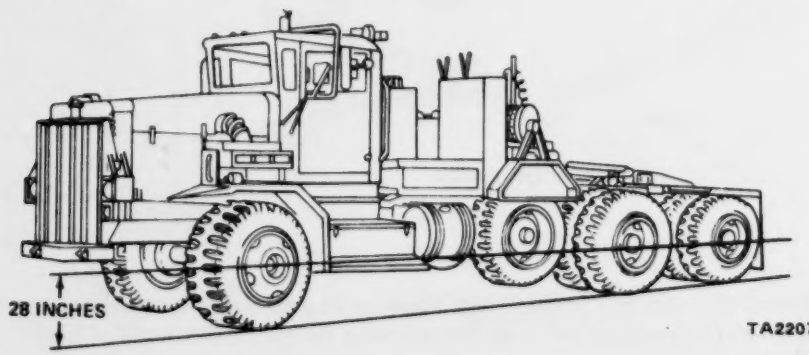
Characteristics

The M911 Truck Tractor is used as a prime mover of a heavy equipment transporter (HET) semitrailer.



Capabilities

The M911 Truck Tractor can ford water a maximum depth of 28 inches (71 cm) without using additional water fording equipment.



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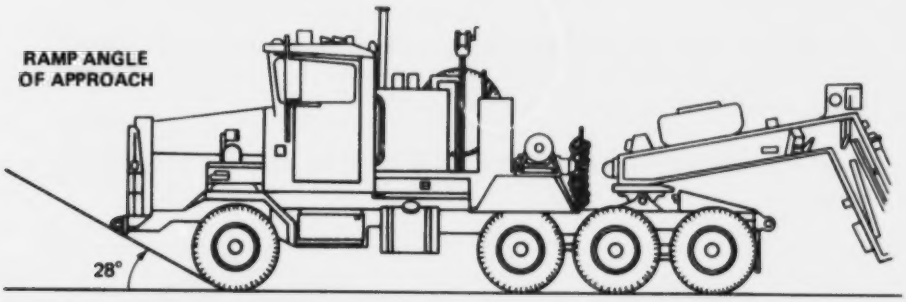
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES – CONTINUED

The M911 Truck Tractor is capable of working in outside air temperature ranges of -25°F (-32°C) to 125°F (52°C) without using additional kits.

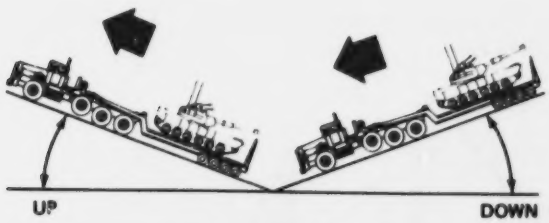
While pulling the M747 semitrailer with a 60-ton (54431 kg) payload on hard surface roads, the M911 Truck Tractor can hold a speed of 43 mph (69 km/h) on level roads and 14 mph (23 km/h) while climbing a 3 percent grade.

While loaded, and entering steep inclines on rough terrain, the ground clearance ramp angle of approach is 28° (0.5 rad). The angle of departure is unlimited.

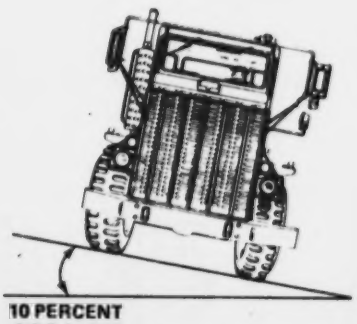


Loaded, the M911 Truck Tractor can go up or come down a 20 percent grade while pulling the M747 semitrailer.

Loaded, the M911 Truck Tractor can operate on a side slope up to 10% on a good non slip surface.



20 PERCENT GRADE

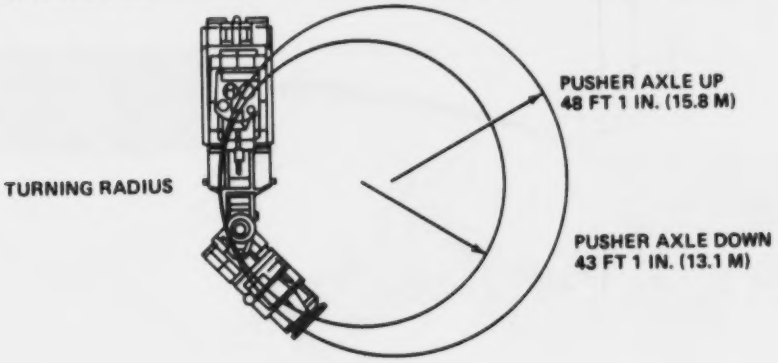


10 PERCENT
SIDE SLOPE

The cruising range of the M911 Truck Tractor at its gross combination weight rating (GCWR) on paved roads averages 345 miles (555 km) with 150 gallons (568 liters) of fuel. TA220766

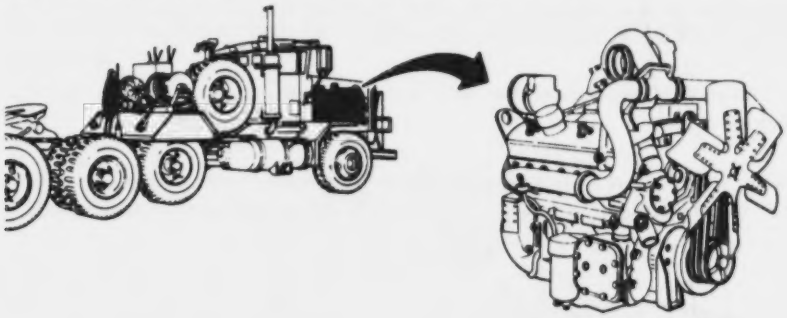
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES – CONTINUED

The turning radius of the M911 Truck Tractor is 48 ft 1 in. (15.8 m) with the pusher axle in the up position, and 43 ft 1 in. (13.1 m) with the pusher axle in the down position.

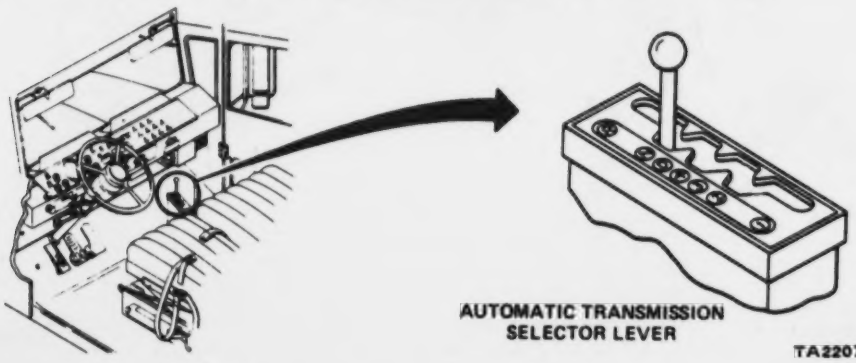


Features

Eight-cylinder, V-type, two-cycle turbocharged diesel engine.



Automatic transmission which provides one reverse speed and five forward speeds.



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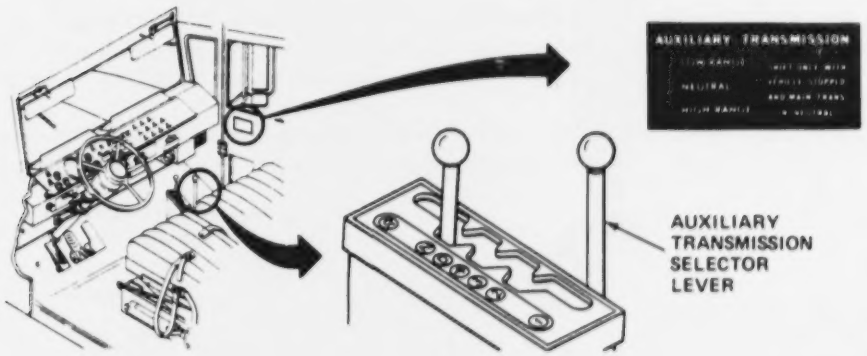
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES – CONTINUED

Two speed auxiliary transmission with a low forward gear range which combines with the main transmission to provide greater pulling power.

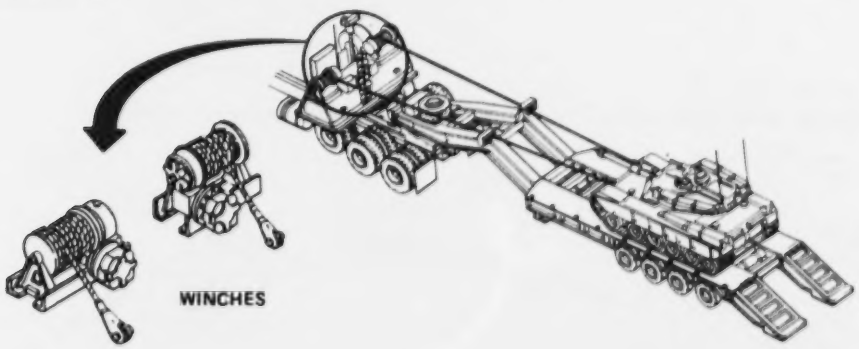


Six wheel drive for positive traction on unimproved road surfaces.

Power steering system is basic manual steering with a hydraulic boost. The mechanical linkage will give operator control if hydraulic oil pressure is lost.

Fuel system consists of two fuel tanks, fuel lines, fuel strainer, fuel pump, fuel filter, fuel pipes, and fuel injectors.

Two winches for winching payloads onto and off of the semitrailer, each winch having 150 feet (46 meters) of 1 inch (25.4 mm) diameter wire rope cable and a capacity of 45,000 pounds (20,430 kg).



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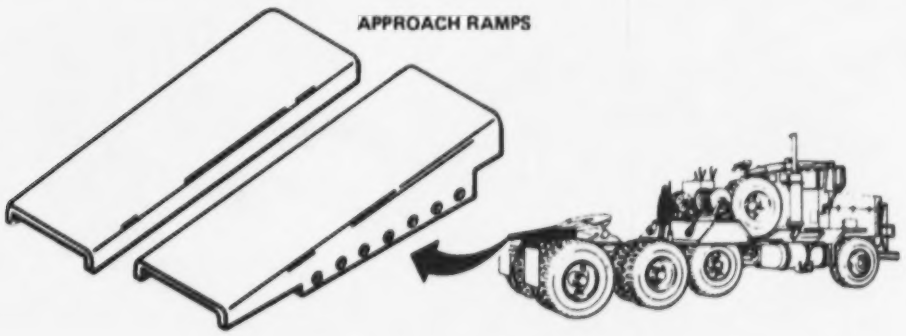
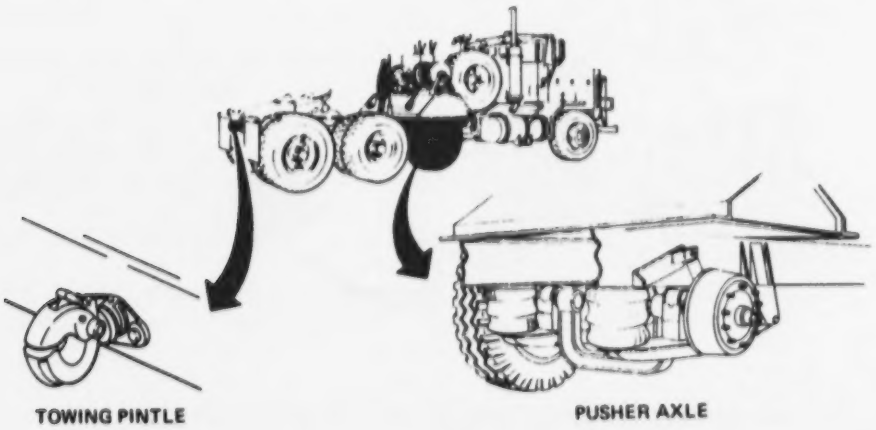
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES – CONTINUED

Heavy-duty approach ramps mounted on truck frame to guide the gooseneck of the M747 semi-trailer onto the fifth wheel.



Air suspended, non driving pusher axle which provides a way to change axle loads to comply with local axle load regulations.

Manual-release type rear pintle hook which has a gross trailer weight capacity of 49,000 pounds (22246 kg).



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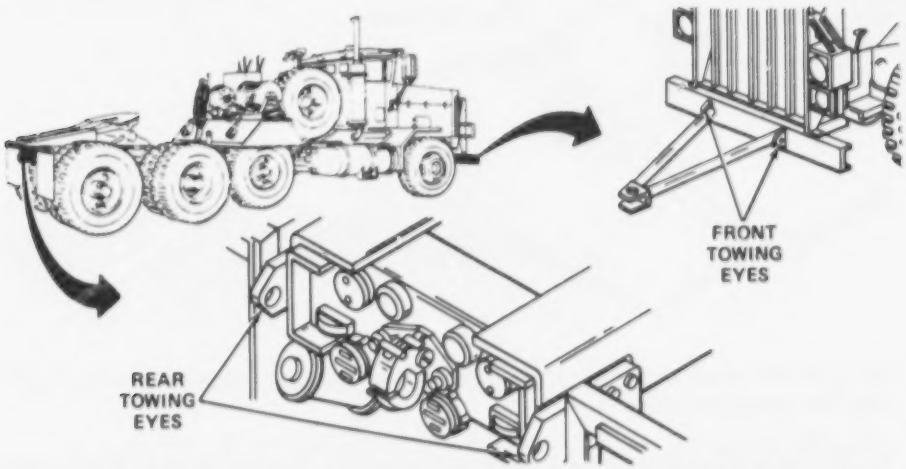
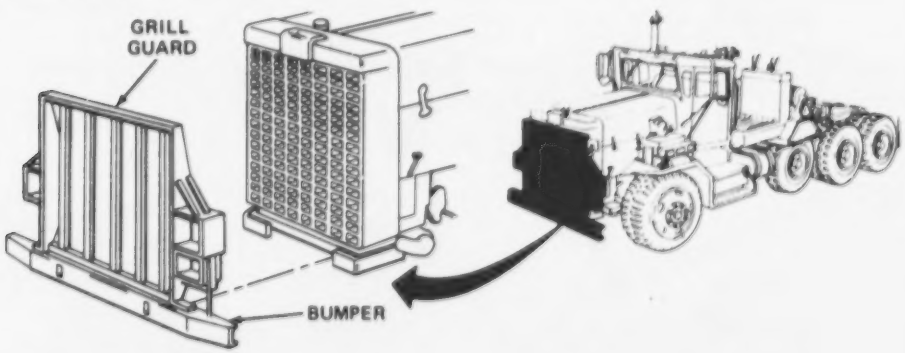
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES – CONTINUED

Two front and two rear towing eyes, each capable of holding loads up to 85,000 pounds (38590 kg) at 45° (0·8 rad) angle from front and rear. The M911 Truck Tractor can be towed with a medium-duty towbar.



Heavy-duty bumper and radiator grill guard to protect front of the M911 Truck Tractor from impact damage.

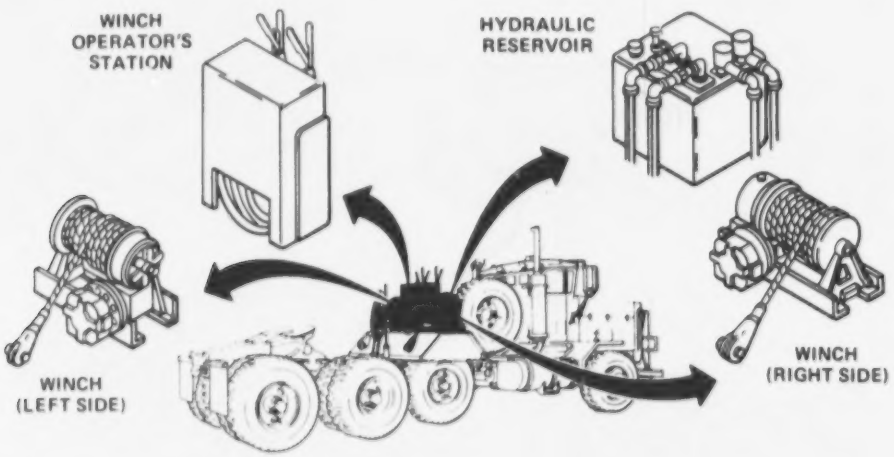


LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Illustrations show major exterior and interior components used while operating the M911 Truck Tractor. Keyed text gives a brief description of each named component. Detailed information is in Chapter 2. An additional illustration shows the M911 Truck Tractor coupled to the M747 semitrailer with a payload, and a weight and payload table (page 1-19).

TA220770

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR



WINCH (LEFT AND RIGHT SIDE)

Two hydraulic motor driven cable and drum winch assemblies that pull a tank or similar type vehicle on and off an attached semitrailer. Each winch has an automatic safety brake to stop and hold a payload if it stops moving.

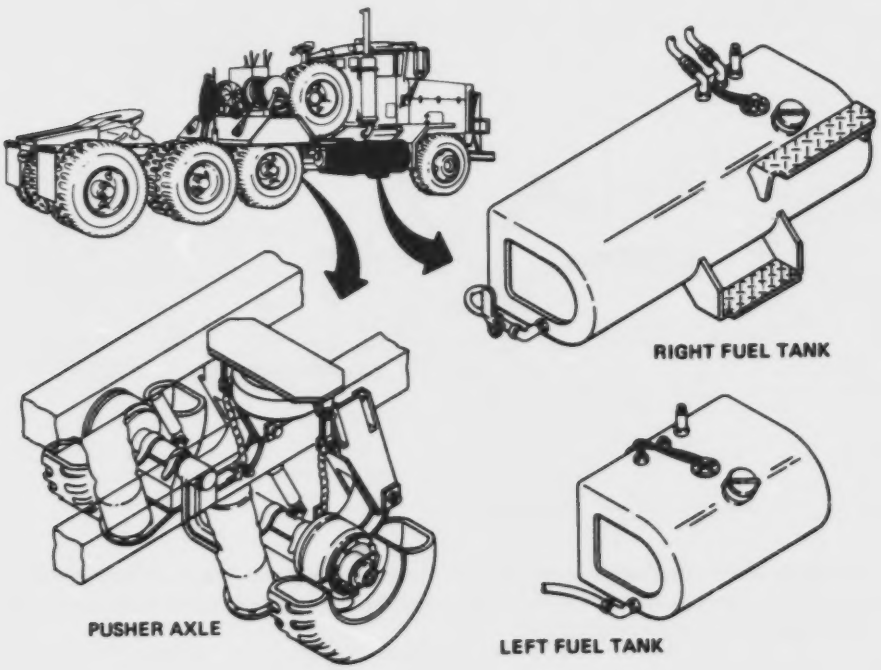
WINCH OPERATOR'S STATION

Control platform which contains the selector valve controls to operate the winches, an independent ENGINE THROTTLE control to increase engine revolutions per minute (rpm) as required during winching operations, and an engine shut down switch.

HYDRAULIC RESERVOIR

Holds 100 gallons (378.4 liters) of hydraulic fluid that is used for winch operations. Located to the right of the winch operator's station.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR – CONTINUED



FUEL TANKS

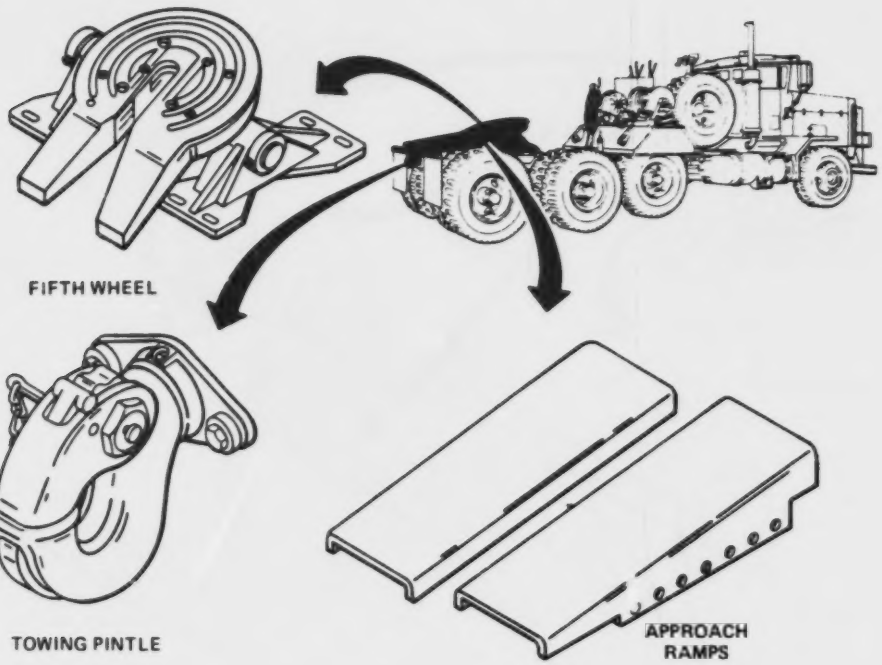
Hold a total of 150 gallons (567.8 liters) of diesel fuel (right tank holds 100 gallons (379 liters), and left tank holds 50 gallons (189 liters).

PUSHER AXLE

The only nondriving axle on the M911 Truck Tractor. It is raised and lowered by adjusting the amount of air in the suspension air bags. The controls for raising and lowering the axle are in the crew cab.

TA220772

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR – CONTINUED



FIFTH WHEEL

Attaching and locking point for semitrailer gooseneck. Fifth wheel tilts in four directions – forward and back, left and right.

TOWING PINTLE

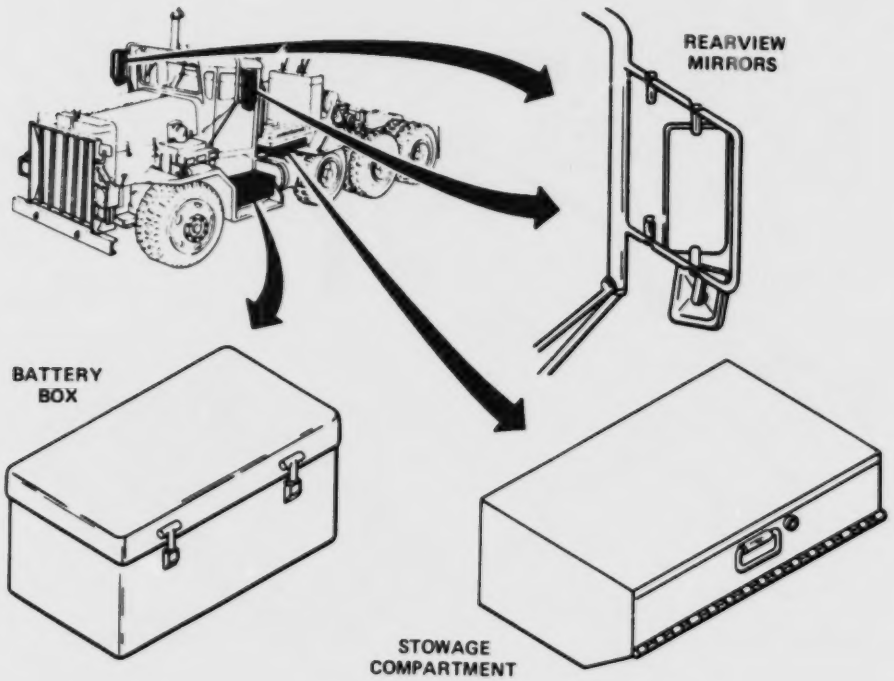
Hook and lock towing point for towing tongued trailer or cart.

APPROACH RAMPS

Guide semitrailer gooseneck onto fifth wheel when coupling to semitrailer.

TA220773

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR – CONTINUED



REARVIEW MIRRORS

Mounted outside of each cab door. They extend out far enough to allow seeing beyond the semitrailer cargo. Both mirrors can be adjusted.

BATTERY BOX

Houses four 12 volt dc batteries connected in series parallel, to supply a 24 volt electrical system.

STOWAGE COMPARTMENT

Lockable box to carry hydraulic jack, tools, and other Basic Issue and Additional Authorization items.

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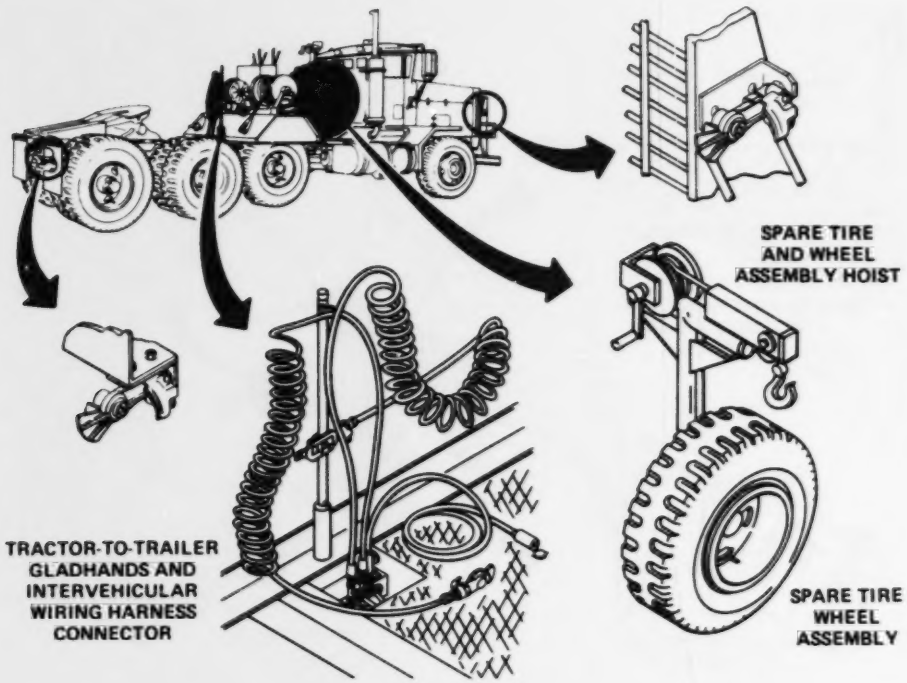
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR – CONTINUED


SPARE TIRE AND WHEEL ASSEMBLY HOIST
TRACTOR-TO-TRAILER GLADHANDS AND INTERVEHICULAR WIRING HARNESS CONNECTOR
SPARE TIRE WHEEL ASSEMBLY

SPARE TIRE AND WHEEL ASSEMBLY HOIST

Hand operated, used to hold, raise, and lower spare tire and wheel assembly.

SPARE TIRE AND WHEEL ASSEMBLY

Fits on all three drive axles, and on inner or outer dual, and carried on hoist bracket. Does not fit pusher axle.

TRACTOR-TO-TRAILER AIR/ELECTRICAL CONNECTORS

Connects air and 24 volt dc to coupled semitrailer providing braking and lights.

FRONT TOWING GLADHANDS

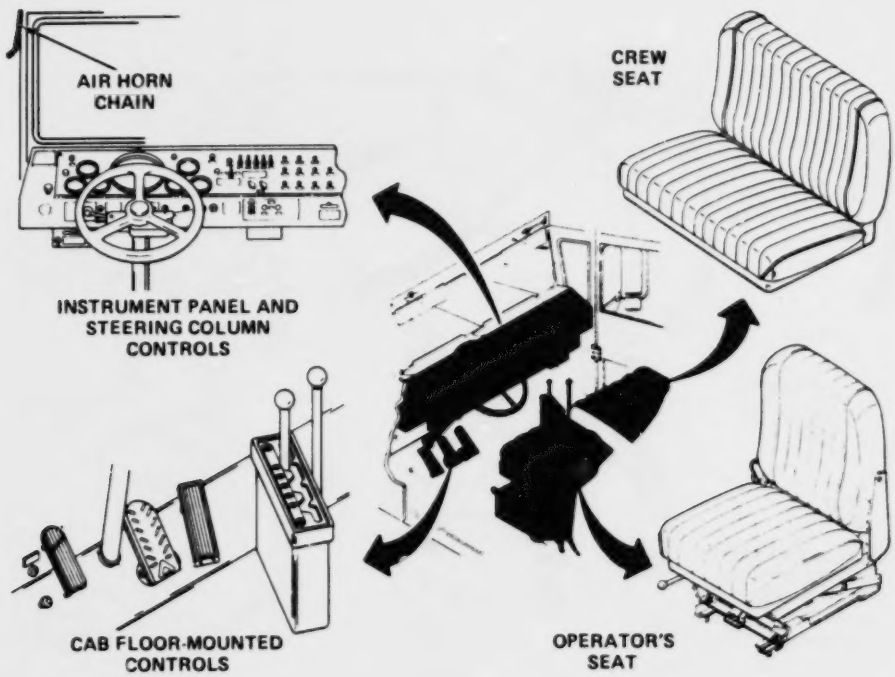
Used to connect a disabled truck's airbrake system to towing vehicle's air brake system.

REAR TOWING GLADHANDS

Used to connect truck airbrake system to a disabled truck's air brake system.

TA220775

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – INTERIOR



INSTRUMENT PANEL, STEERING COLUMN CONTROLS, AND AIR HORN CHAIN

Includes all indicators and hand-operated controls (except main and auxiliary transmission selector levers) used in operating the M911 Truck Tractor.

CAB FLOOR MOUNTED CONTROLS

Includes all floor-operated controls, main and auxiliary transmission selector levers.

CREWSEAT

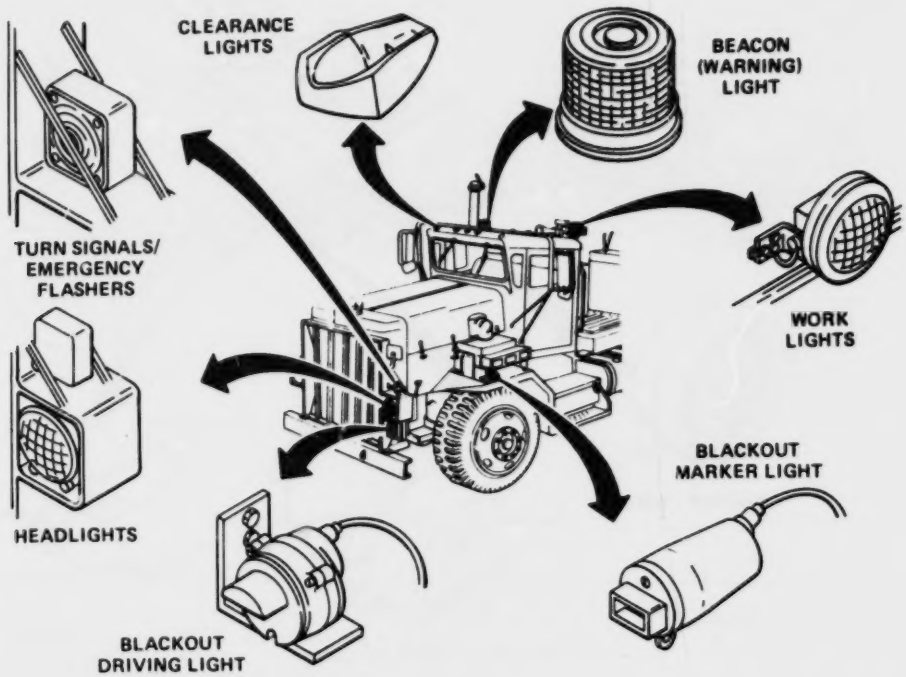
Seats two crew members on a fixed, bench type seat assembly.

OPERATOR'S SEAT

Adjusts forward and backward. Back rest adjusts to three positions, and a built-in shock absorber assembly adjusts to operator's weight.

TA220777

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR LIGHTS



TURN SIGNALS/EMERGENCY FLASHERS

Left or right flash on and off when turn signal is turned on and both flash on and off when emergency flashers are turned on.

CLEARANCE LIGHTS

Five amber lights on top of cab to mark M911 Truck Tractor size while driving.

BEACON (WARNING) LIGHT

Large amber light on top of cab that contains flashing strobe unit.

WORK LIGHTS

Two flood lights facing rearward to light up winch and semitrailer while working.

HEADLIGHTS

Two used to light up road in front of M911 Truck Tractor in non combat driving.

BLACKOUT DRIVING LIGHT

One used instead of headlights in combat driving.

BLACKOUT MARKER LIGHT

Two, used to mark truck location during night driving.

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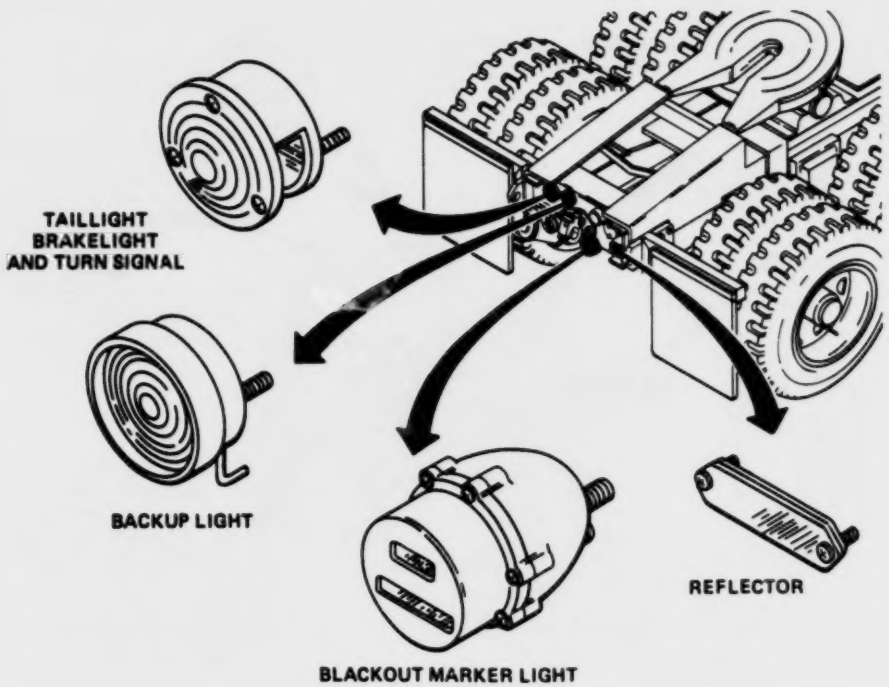
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – EXTERIOR LIGHTS – CONTINUED



TAILLIGHT, BRAKELIGHT, AND TURN SIGNAL

Two that identify rear of truck while driving. They also become brighter when service brakes are applied. Left or right light flashes when turn signal is turned on, and both flash when emergency flashers are turned on.

BACKUP LIGHT

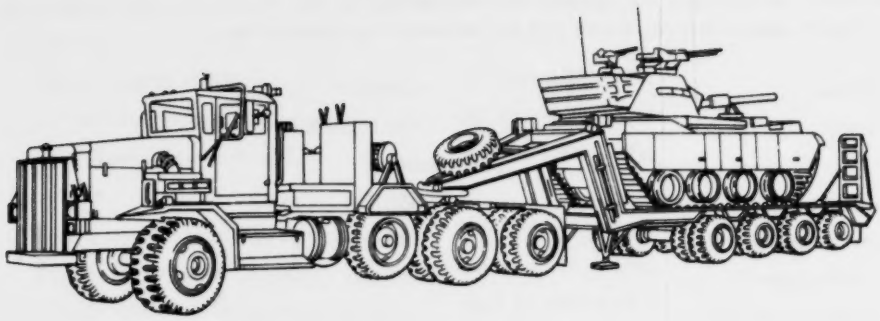
One used to help driver see when backing up in non combat driving. It engages when main transmission is in reverse position and blackout light is not ON.

BLACKOUT MARKER LIGHT

Two used to mark M911 Truck Tractor location by ground forces in combat driving.

REFLECTOR

Two on rear of M911 Truck Tractor to reflect light of other vehicles so that your truck may be seen by other drivers when your M911 Truck Tractor lights are not on. These are covered for combat driving.



M911/M747 COMBINATION WITH PAYLOAD

Vehicle Weight and Payload

VEHICLE	NET WEIGHT LB (KG)	COMBAT LOADED LB (KG)
M60A1	102,000 (46,267)	110,000 (49,896)
M60A2	106,000 (48,082)	114,000 (51,710)
M60A3	104,000 (47,174)	114,000 (51,710)
M48A5	110,000 (49,896)	110,665 (50,198)
M113A1	21,350 (9,684)	25,500 (11,567)
M88A1	105,000 (47,628)	112,000 (50,803)
M551A1	35,000 (15,876)	35,600 (16,148)

Bridge Classification – 60 ton (54.4 metric ton) payload, normal crossing . . class 82.

TA220780

EQUIPMENT DATA

Equipment, performance, and payload data for the M911 Truck Tractor and major components are listed in tabular format. All weights and dimensions are approximate.

Make	Oshkosh
Model	M911 (C-HET)
Dimensions	
Length (overall)	360.0 in. (9.14 m)
Width (overall)	113.6 in. (2.89 m)
Height (overall)	141.0 in. (3.56 m)
Height (reducible)	121.0 in. (3.07 m)
Ground clearance	14.0 in. (0.36 m)
Center of gravity (w/o trailer)	118.0 in. (3.00 m)
Wheel base	235.0 in. (5.97 m)
Fifth wheel height	64.0 in. (1.63 m)
Semitrailer swing clearance from centerline of king pin	90.4 in. (2.29 m)
Semitrailer swing radius from centerline of king pin to point of nearest obstruction in front of fifth wheel	59.0 in. (1.50 m)
Weights	
Curb	39,952 lb (18,138 kg)
Gross Vehicle Weight (GVW)	85,952 lb (39,022 kg)
Maximum load on fifth wheel	46,000 lb (20,884 kg)
Gross combination weight rating GCWR	191,952 lb (87,146 kg)
Weight Distribution	
Front Axle	
Empty (pusher axle up)	19,954 lb (9,059 kg)
Loaded (pusher axle up)	21,324 lb (9,681 kg)
Loaded (pusher axle down)	13,634 lb (6,190 kg)
Rear (tandem axles) Axles	
Empty (pusher axle up)	19,998 lb (9,079 kg)
Loaded (pusher axle up)	64,628 lb (29,341 kg)
Loaded (pusher axle down)	52,318 lb (23,752 kg)
Pusher axle (down)	20,000 lb (9,080 kg)

EQUIPMENT DATA – CONTINUED

Ground Pressure	
Front Axle	
Empty (pusher axle up)	84.5 psi (582.6 kPa)
Loaded (pusher axle up)	90.3 psi (622.6 kPa)
Loaded (pusher axle down)	57.8 psi (398.5 kPa)
Rear Axle	
Empty (pusher axle up)	21.2 psi (146.2 kPa)
Loaded (pusher axle up)	88.5 psi (610.2 kPa)
Loaded (pusher axle down)	55.4 psi (382.0 kPa)
Performance	
Cruising range at GCWR w/150 gal (567.8 L) fuel	345 mi (552 km) on paved roads
Drawbar pull	63,687 lb (28,914 kg)
Maximum load	114,000 lb (51,710 kg)
M911/M747 Combination	
Maximum speed forward	43 mph (68.8 km/h)
Maximum speed reverse	9.8 mph (15.8 km/h)
Maximum grade	20 percent
Maximum side slope (with good traction surface)	10 percent
Maximum towing speed	43 mph (68.8 km/h)
Maximum towed speed	15 mph (24 km/h)
Fording depth (hard bottom water body)	28.0 in. (71 cm)
Ramp angle of approach	28° (.5 rad)
Ramp angle of departure	unlimited
Turning radius	
Pusher axle up	48 ft 1 in. (15.88 m)
Pusher axle down	43 ft 1 in. (13.13 m)
Capacities	
Engine oil	25 qt (23.7 liters)
Engine oil filter (approx.)	2 qt (1.9 liters)
Cooling system	32.5 gal (123.0 liters)
Fuel	150 gal. (567.8 liters)

EQUIPMENT DATA – CONTINUED

Capacities – Continued	
Transmission fluid (main)	Shallow pan 26 qt (24.6 liters) Deep pan 29 qt (27.4 liters)
Transmission fluid (auxiliary)	5.5 qt (5.2 liters)
Rear axle (forward)	43 pt (20.34 liters)
Rear axle (aft)	34 pt (8.04 liters)
Alcohol evaporator	1 qt (0.95 liters)
Hydraulic reservoir	100 gal (416.4 liters)
Stowage capacities (stowage compartment)	111 cu ft (3.1 m^3)
Engine	
Make	Detroit Diesel Allison
Model	8V92T-90 or 8V92TA-90
Type	Two-stroke V-type diesel
Cylinder	8
Bore	4.84 in. (123 mm)
Stroke	5.00 in. (127 mm)
Torque	1223 ft-lb (1658 N-m)
Maximum engine brake HP at 2100 rpm	430
Maximum governed speed (no load) (loaded)	2225 rpm 2100 rpm
Lubrication type	pressure
Oil filter	1 full flow, replaceable element
Fuel	
Type fuel	Military type DF-2
Fuel System	
Type fuel system	diesel injection
Tank quantity	2
Tank type	cylinder
Tank capacity	
Right tank	100 gal. (379 liters)
Left tank	50 gal. (189 liters)
Total fuel	150 gal. (568 liters)

EQUIPMENT DATA – CONTINUED

Fuel System – Continued	
Tank location	Winch platform sides
Air cleaner	
Type air cleaner	Farr T-528
Quantity	1
Capacity	160 cf/m (4.48 m^3/min)
Cooling System	
Radiator working pressure	7 psi (48.3 kPa)
Electrical System	
Voltage	24 volts
Alternator capacity	65 amps
Radio suppression	yes
Circuit breakers	
Type circuit breakers	Manual reset
Quantity	10
Batteries	
Quantity	4
Voltage (each)	12 volts
Connection	Series parallel
Capacity	100 amps @ 20 hr rate
Transmission (main)	
Make	Allison
Model	CLBT 750
Type	Automatic
Number of Speeds	
Forward speeds	5
Reverse speeds	1
Maximum speed in each gear	
1	8.48 mph (13.64 km/h)
2	13.78 mph (22.17 km/h)
3	21.23 mph (34.16 km/h)
4	31.39 mph (50.51 km/h)

EQUIPMENT DATA – CONTINUED

Transmission (main) – Continued	
5	43 mph (68.8 km/h)
R	9.81 mph (15.78 km/h)
Transmission (Auxiliary)	
Make	Fuller
Model	AT1202
Type	Manual
Number of ranges	2 forward
Maximum speed in each range	
Low	21.59 mph (34.74 km/h)
High	43 mph (68.8 km/h)
Axles	
Maximum load capacity	
Front axle	23,000 lb (10,442 kg)
Pusher axle	20,000 lb (9,080 kg)
Forward tandem axle	65,000 lb (29,510 kg)
Rear tandem axle	65,000 lb (29,510 kg)
Maximum steering angle (front axle)	30° (0.53 rad)
Brake System	
Actuation	Air mechanical
Fail-safes (spring brakes)	4 (one at each wheel of tandem rear axles)
Pressure range	65 to 125 psi (448 to 862 kPa)
Wheels	
Make/model	
Front/rear	Budd, R-47820-2
Pusher	Oshkosh, 07C63795-C
Quantity	
Front/rear	10
Pusher	2
Spare wheel quantity	1
Rim size	24 in. x 10 in. (61 cm x 25.4 cm)
Dish depth	
Front/rear	8.88 in. (22.6 cm)
Pusher	1 in. (2.54 cm)

EQUIPMENT DATA – CONTINUED

Wheels – Continued	
Bolt circle	
Front/rear	13.19 in. (33.5 cm)
Pusher	11.25 in. (28.6 cm)
Stud quantity per wheel	10
Tires	
Type	Bias ply
Quantity	12
Spare tire quantity	1
Tread type	Traction, non-directional
Size	14 in. x 24 in. (35.56 cm x 60.96 cm)
Ply rating	J/18
Load capacity (95 psi @ 50 mph)	11,120 lb (5,048 kg) each
Tire pressure	
Front axle tires	95 psi (655 kPa)
Pusher axle tires	95 psi (655 kPa)
Tandem rear axle tires	85 psi (586 kPa)
Steering System	
Type	Mechanical
Actuation	Hydraulic power booster
Fifth wheel	
Type	Full (4-way) oscillating
King pin lock size	3.50 in. (8.89 cm)
Pintle	
Type	Manual release
Gross trailer weight capacity	49,000 lb (22246 kg)
Towing Eyes	
Quantity	2 front, 2 rear
Maximum load capacity each (up to 45° angle from front or rear)	85,000 lb (38,590 kg)
Cab	
Type	Reinforced heavy-duty steel 3 point cushion mounted

EQUIPMENT DATA – CONTINUED

Cab – Continued	
Windshield	Tinted, 1 piece, reverse slope
Personnel capacity	3
Accessories	
Electric utility outlet	24 volts
Heater/Defroster	Recirculating type
Winches and Leading System	
Winch type	Hydraulically driven worm gear
Winch quantity	2
Winch drive	Hydraulic
Winch load capacity	45,000 lb (20,430 kg)
Winch wire rope cable	
Diameter	1 in. (2.54 cm)
Length	150 ft (45.8 m)
Speed	See rated line speed below
Winch safety brakes	Oil cooled, adjustable automatic
Maximum input rpm at rated load (each)	330 rpm
Rated line pull (pounds) and line speed (feet per minute) at 330 rpm with 1 inch (2.54 cm) cable size	
1st layer line pull	45,000 lb (20,430 kg)
1st layer line speed	18.7 fpm (5.7 m/min)
2nd layer line pull	36,000 lb (16.344 kg)
2nd layer line speed	23.0 fpm (7.0 m/min)
3rd layer line pull	30,000 lb (13.620 kg)
3rd layer line speed	28.0 fpm (8.5 m/min)
4th layer line pull	25,700 lb (11.668 kg)
4th layer line speed	33.0 fpm (10.1 m/min)
5th layer line pull	22,500 lb (10,215 kg)
5th layer line speed	37.0 fpm (11.3 m/min)

CHAPTER 2

OPERATING INSTRUCTIONS

OVERVIEW

This chapter shows and describes the M911 Truck Tractor controls and indicators and contains crew-level preventive maintenance procedures. Basic instructions are included for starting, moving, and stopping the truck in both usual and unusual conditions. There are also guidelines and information that will help you understand and better operate the M911 Truck Tractor. This chapter is divided into the following sections:

		Page
Section I.	DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS	2-1
Section II.	PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)	2-29
Section III.	OPERATION UNDER USUAL CONDITIONS	2-63
Section IV.	OPERATION UNDER UNUSUAL CONDITIONS	2-111

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

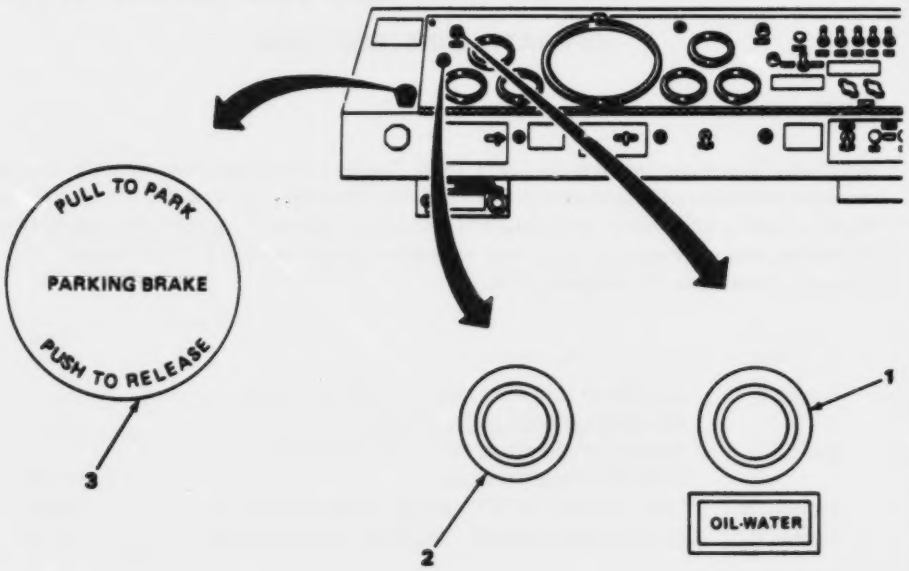
GENERAL

This section shows the locations and describes the function and use of the controls and indicators you will use in operating the M911 Truck Tractor. Illustration and keys are provided for the following groups of controls and indicators:

	Page		Page
Cab Controls	2-22	Operator's Seat Adjustment Controls	2-21
Cab Floor-Mounted Controls	2-15	Steering Wheel and Column Mounted Controls	2-20
Instrument Panel Controls and Indicators	2-2	Winch Controls	2-25

You should know the location and understand the proper use of every control and indicator on the M911 Truck Tractor. Use this section to learn or refresh your memory about each of the controls and indicators you will be using during all phases of your truck's operation.

INSTRUMENT PANEL CONTROLS AND INDICATORS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION If this light comes on while you are driving, stop the engine immediately and investigate the cause to prevent possible severe engine damage.	
1	LOW OIL PRESSURE/HIGH WATER TEMPERATURE WARNING LIGHT	Red light comes on when engine oil pressure is too low or when engine water temperature is too high.
2	LEFT TURN SIGNAL INDICATOR	Flashes green when left turn signal is on.
3	PARKING BRAKE CONTROL	Pull out to apply parking brakes; push in to release parking brakes and to charge trailer air system.

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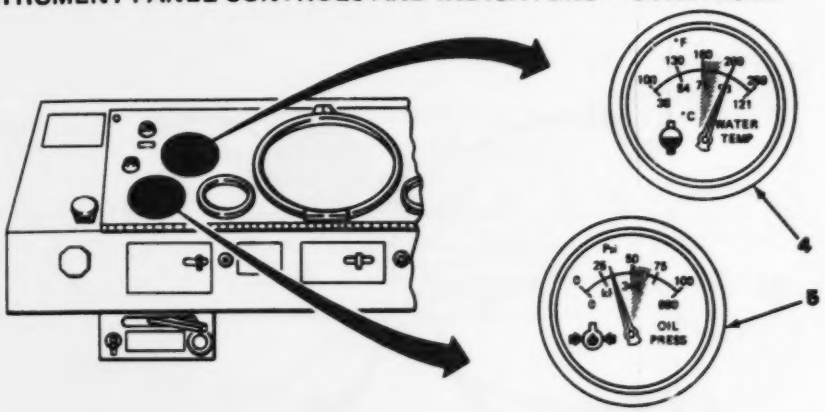
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION	
	If this gage shows temperatures above 200°F (93°C), stop the engine immediately and investigate the cause. Overheated engine may cause engine damage.	
4	ENGINE WATER TEMPERATURE GAGE	Registers engine coolant temperature in degrees Fahrenheit and Centigrade (normal range is 160° - 185°F (71° - 85°C)).
	CAUTION	
	If at 1800 - 2100 rpm, the minimum engine oil pressure should drop below 30 psi (207 kPa), stop the engine immediately and investigate the cause.	
5	ENGINE OIL PRESSURE GAGE	Registers engine oil pressure in pounds per square inch (psi) and in kiloPascals (kPa). (Normal range at 1800 - 2100 rpm is 50 - 70 psi (345 - 483 kPa).

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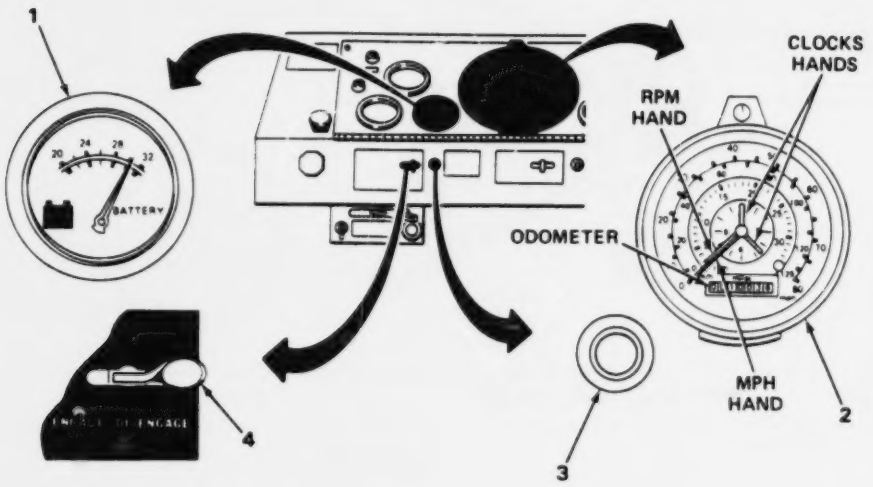
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	BATTERY INDICATOR	Indicates battery rate of charge or discharge in volts. Normal reading is 20-30 Vdc, maximum +31 Vdc.
		CAUTION Do not operate vehicle without a disc in tachograph. Damage to the tachograph stylus will result.
2	TACHOGRAPH	Registers truck speed (mph and km/h hand), engine speed (rpm hand), and distance traveled (odometer). The other two hands are clock hands.
3	PTO/AUXILIARY THROTTLE INDICATOR	Red light indicates when power takeoff unit is engaged or if throttle release safety switch at winch control panel has been accidentally left on.
4	PTO CONTROL	With throttle release safety switch off, move lever to ENGAGE position to engage power takeoff unit. Move lever to DISENGAGE position to disengage power takeoff unit. When pto has disengaged indicator will go off.

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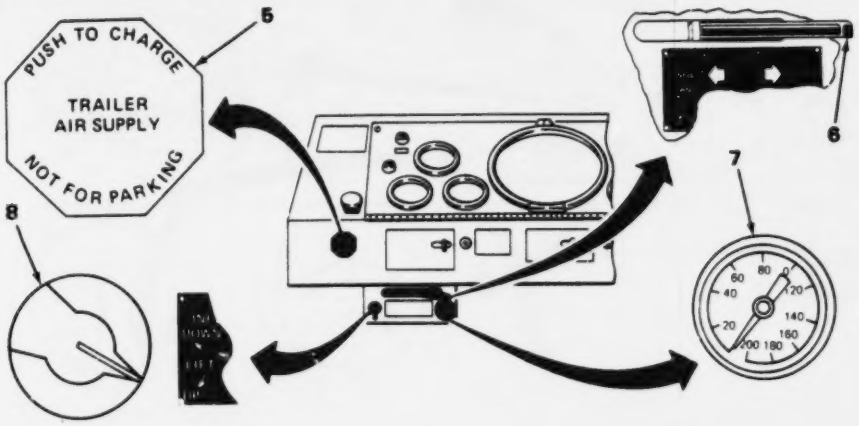
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
5	TRAILER AIR SUPPLY CONTROL	Supplies air to trailer air reservoirs. Push in to supply air to (charge) trailer reservoirs; pull out to shut off air to trailer. If tractor air system pressure drops to 65 psi (35.9 kPa) the trailer air supply valve will trip, fully applying trailer spring brakes.
6	PUSHER AXLE AIR PRESSURE LOAD CONTROL	Adjusts air pressure load on pusher axle in order to meet local highway regulations regarding maximum loads per axle. Move this lever left to INFLATE position to increase air load on pusher axle. Return lever to DEFLATE position to relieve air load on pusher axle.
7	PUSHER AXLE AIR PRESSURE LOAD GAGE	Indicates air pressure load (in psi) on pusher axle. With full air pressure load on pusher axle, this gage should register approximately 110 psi (755 kPa).
8	PUSHER AXLE RAISE/LOWER CONTROL	Activates air suspension to lower or raise pusher axle. To lower pusher axle, rotate knob counterclockwise to DOWN position. To raise pusher axle, rotate knob clockwise to UP position.

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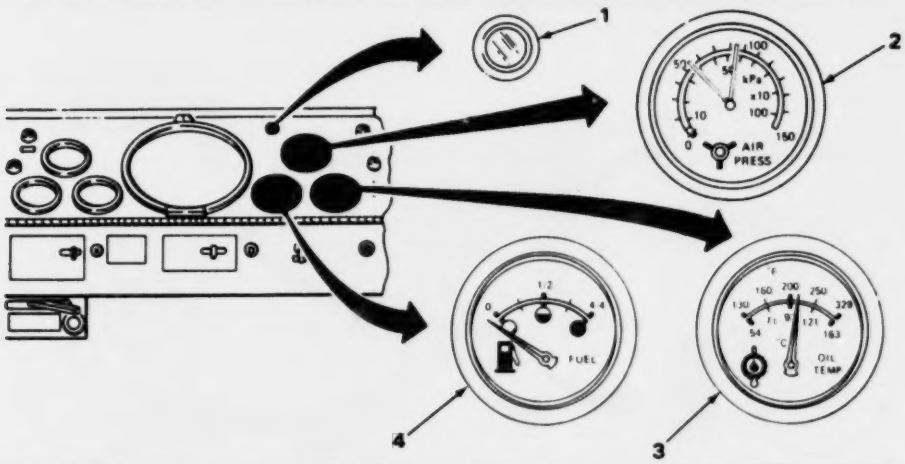
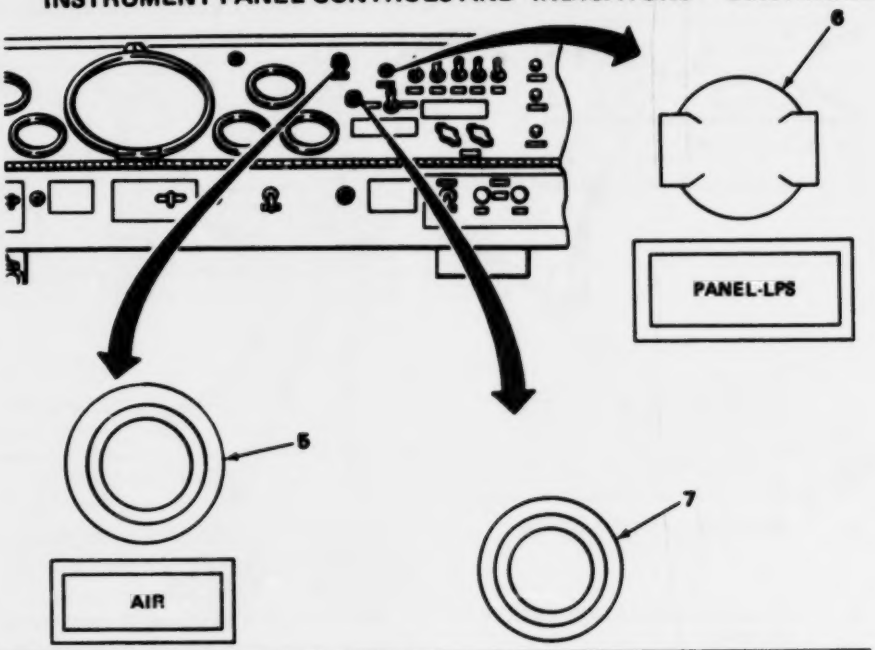
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	HEADLIGHT HIGH BEAM INDICATOR	Indicates (red) when headlights are on high beam.
2	AIR PRESSURE GAGE	Registers air pressure (in psi and kPa) in both sections of dual system. Green needle shows front axle system air pressure. Red needle shows rear axle system air pressure. Normal reading is 100 to 125 psi (690 to 862 kPa).
	CAUTION When using the hydraulic retarder, maximum allowable fluid temperature is 300°F (149°C). When not using the retarder, the maximum allowable fluid temperature is 250°F (121°C). Transmission overheat will cause transmission damage.	
3	MAIN TRANSMISSION OIL TEMPERATURE GAGE	Registers main transmission fluid temperature (in °F and °C). Normal operating range is 160° - 220°F (71° - 104°C).
4	FUEL LEVEL GAGE	Registers level of fuel in right fuel tank.

TA220785

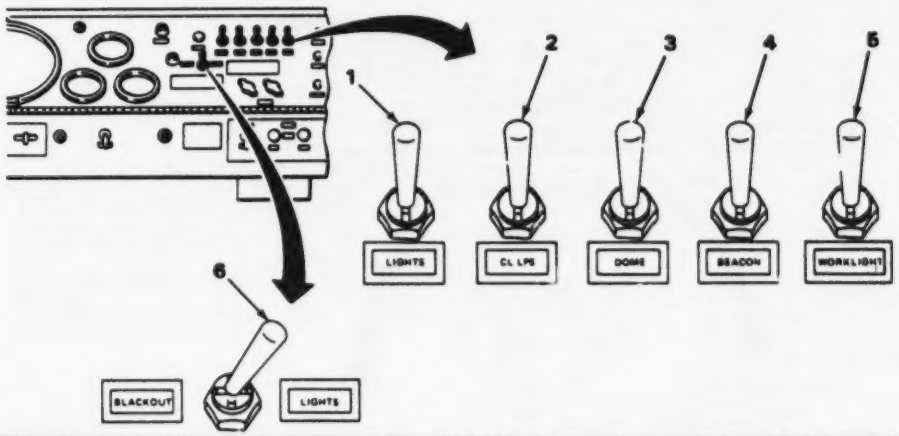
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION If this light comes on and/or buzzer sounds while you are driving, stop immediately and investigate the cause. Low air pressure could cause loss of normal braking.	
5	AIR (LOW AIR PRESSURE WARNING LIGHT)	Red warning light will remain on and buzzer will sound until air system pressure in each section of dual system exceeds 60 psi (414 kPa).
6	PANEL LPS (INSTRUMENT PANEL RHEOSTAT)	When service lights switch is on, rotate this knob clockwise to turn on instrument panel lights; keep turning knob clockwise to dim panel lights. Rotate knob fully counter-clockwise to turn off panel lights.
7	RIGHT TURN SIGNAL INDICATOR	Flashes green when right turn signal is on.

TA220786

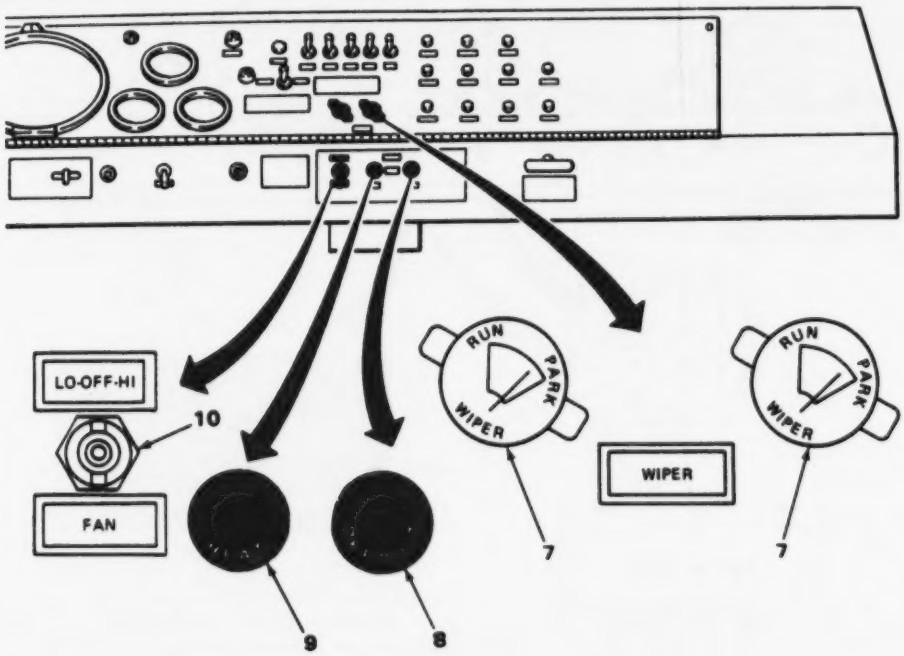
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	SERVICE LIGHTS SWITCH	Push up to turn on service lights; return to center position to turn off service lights.
2	CL LPS (CLEARANCE LIGHTS SWITCH)	Push up to turn on clearance lights; return to center position to turn off clearance lights.
3	DOME LIGHTS SWITCH	Push up to turn on dome lights; return to center position to turn off dome lights.
4	BEACON (WARNING) LIGHT SWITCH	Push up to turn on beacon warning light; return to center position to turn off beacon warning light.
5	WORK LIGHTS SWITCH	Push up to turn on work lights and illuminate winch station and rear of truck. Return to center position to turn off work lights.
6	BLACKOUT LIGHTS SWITCH	Pull out and push to the left to turn on blackout light; pull out and return to the right to turn off blackout light.

TA220787

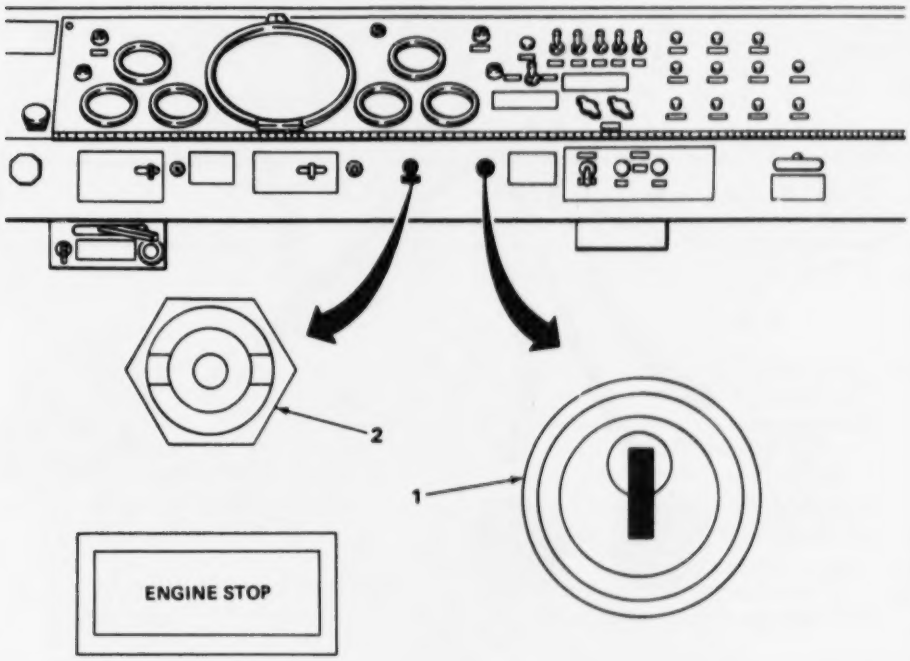
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
7	WIPER RUN-PARK (WIPER CONTROLS)	Left control operates left windshield wiper; right control operates right wiper. Rotate control counterclockwise to RUN position to turn on wiper. Rotate control clockwise to PARK position to turn off wiper.
8	DEFROST (DEFROSTER CONTROL)	Pull out to open defroster vents; push in to close vents.
9	HEAT (HEATER TEMPERATURE CONTROL)	Pull out to increase heater output temperature; push in to decrease output temperature.
10	FAN LO-OFF-HIGH (HEATER FAN SPEED SWITCH)	Controls speed of heater fan. Push to the left for low speed, center to turn off fan, or to the right for high speed.

TA220788

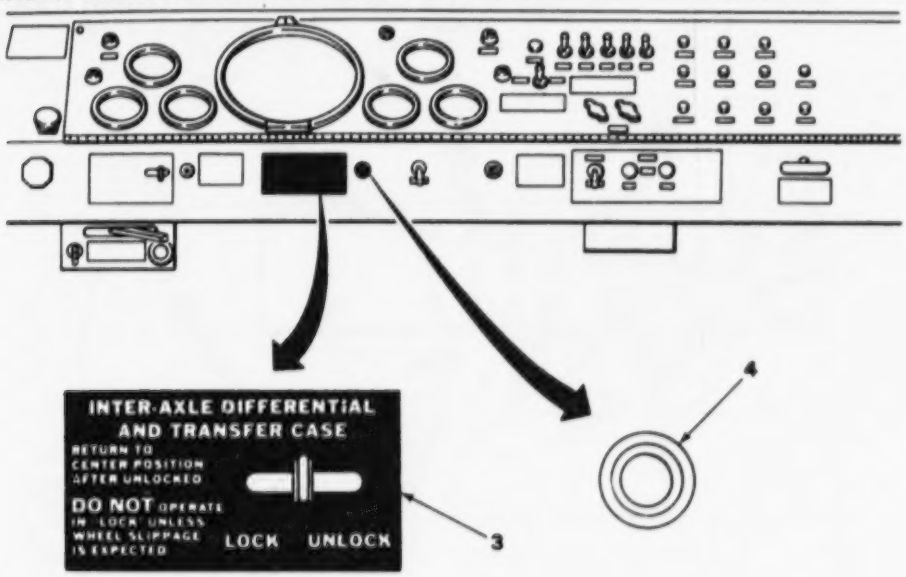
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	KEY SWITCH	Rotate key clockwise to turn this switch to the on position (low oil pressure/high water temperature warning light and buzzer should come on). To start engine, continue rotating key further clockwise to the start position, while slightly depressing the accelerator pedal. (When engine starts, low oil pressure/high water temperature warning light and buzzer should go off.)
2	ENGINE STOP SWITCH	This switch stops engine when switch is held in up position. Hold it in up position until engine stops completely. When engine stops, release switch; it will return to center (off) position. Turn key switch counterclockwise to OFF position.

TA220789

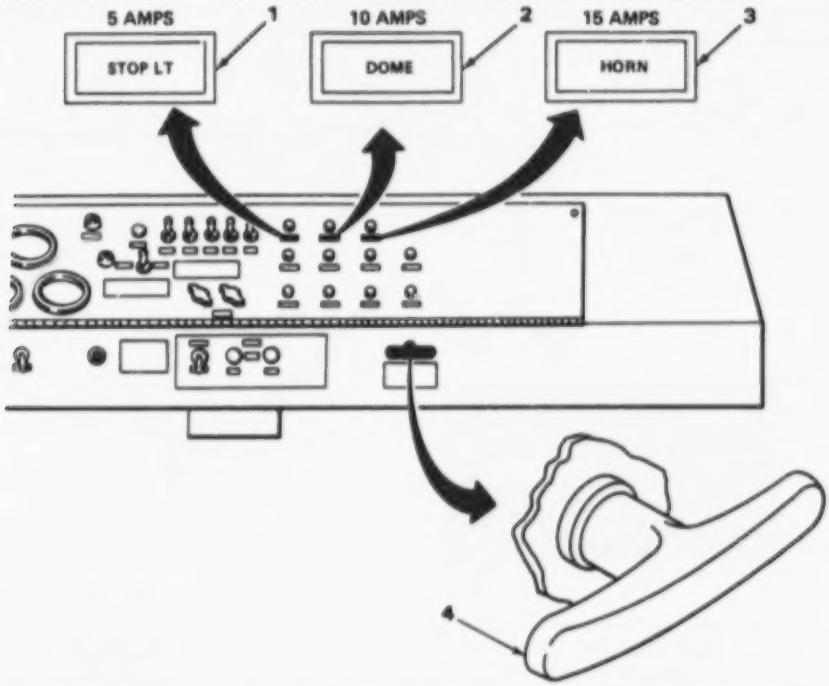
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION Stop truck before shifting this control lever. Failure to do so could cause damage to drive train.	
3	INTER-AXLE DIFFERENTIAL AND TRANSFER CASE (DIFFERENTIAL LOCK/UNLOCK CONTROL)	Controls inter-axle differential and transfer case differential. Center position is normal operating position, allowing full differential action to all three driving axles. For maximum traction in off-highway conditions, stop vehicle then move lever to the LOCK position to lock up the driveline. When traction is back to normal, move the lever to the UNLOCK position while the truck is moving. When the locking system disengages and differential lock indicator goes off, return the lever to the center position.
4	DIFFERENTIAL LOCK INDICATOR	Red light indicates when differential LOCK/UNLOCK control is in LOCK position and driveline locking system is engaged.

TA220790

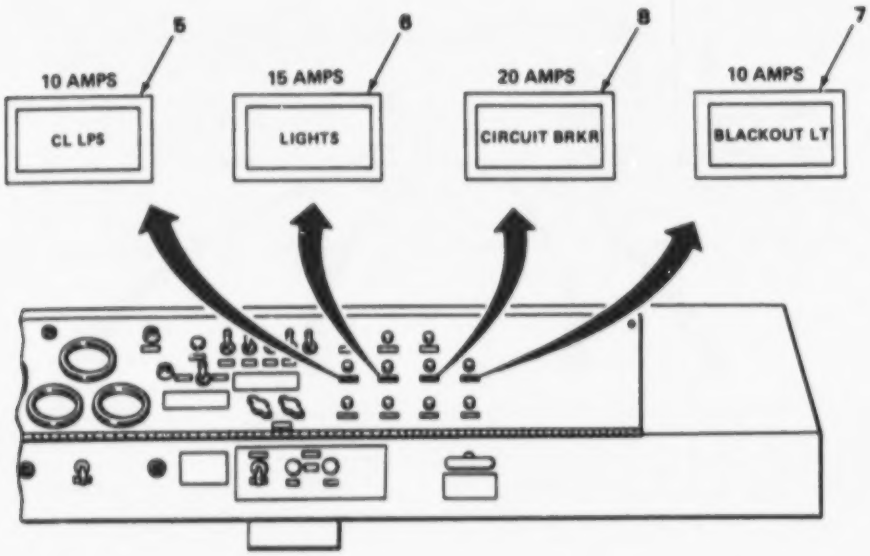
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	STOP LT (STOPLIGHTS CIRCUIT BREAKER)	If a breaker trips, the numbered button will pop outward. Push in on button to reset circuit breaker. If breaker trips again, investigate cause and notify organizational maintenance, if necessary. Number on button indicates amp rating for that circuit.
2	DOME (DOME LIGHTS CIRCUIT BREAKER)	Operates same as item 1.
3	HORN (HORN CIRCUIT BREAKER)	Operates same as item 1.
4	QUICK START CONTROL	When this handle is pulled out, ether is injected into engine cylinders to aid in cold weather starting. Refer to cold weather starting procedures on page 2-67 for correct use.

TA220791

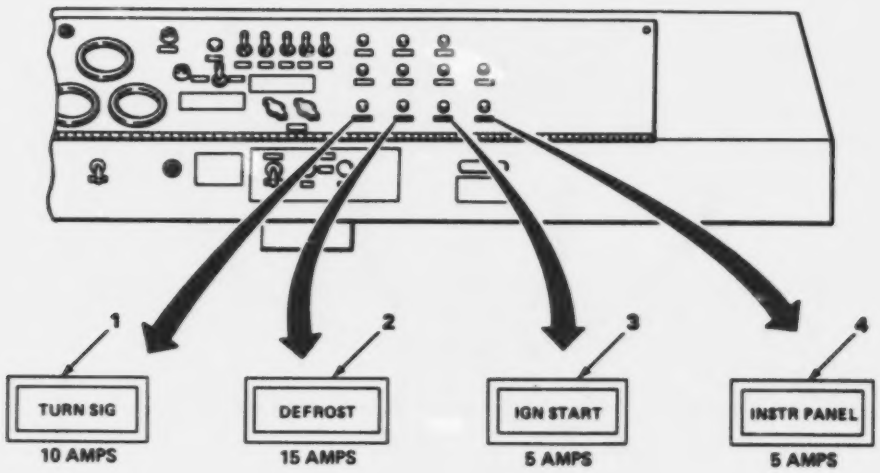
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
5	CL LPS (CLEARANCE LIGHTS CIRCUIT BREAKER)	If a breaker trips, the numbered button will pop outward. Push in on button to reset circuit breaker. If breaker trips again, investigate cause and notify organizational maintenance, if necessary. Number on button indicates amp rating for that circuit.
6	LIGHTS (SERVICE LIGHTS CIRCUIT BREAKER)	Operates same as item 5.
7	BLACKOUT LT (BLACKOUT LIGHT CIRCUIT BREAKER)	Operates same as item 5.
8	CIRCUIT BRKR (ENGINE STOP CIRCUIT BREAKER)	Operates same as item 5.

TA220792

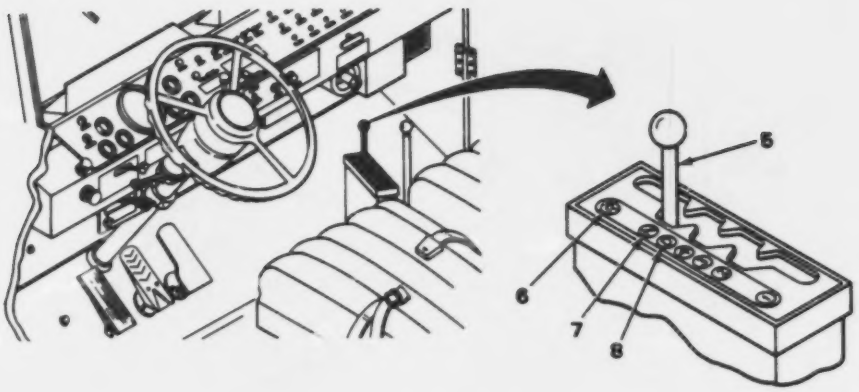
INSTRUMENT PANEL CONTROLS AND INDICATORS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	TURN SIG (TURN SIGNAL CIRCUIT BREAKER)	If a breaker trips, the numbered button will pop outward. Push in on button to reset circuit breaker. If breaker trips again, investigate cause and notify organizational maintenance, if necessary. Number on button indicates amp rating for that circuit.
2	DEFROST (HEATER FAN CIRCUIT BREAKER)	Operates same as item 1.
3	IGN START (IGNITION START (KEY) SWITCH CIRCUIT BREAKER)	Operates same as item 1.
4	INSTR PANEL (INSTRUMENT PANEL CIRCUIT BREAKER)	Operates same as item 1.

TA220793

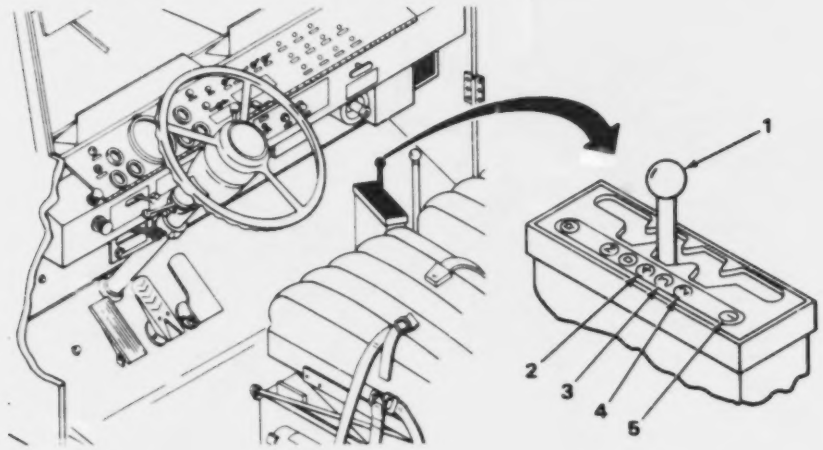
CAB FLOOR-MOUNTED CONTROLS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
5	MAIN TRANSMISSION RANGE SELECTOR LEVER The following are the available gear selection ranges:	Used to select the proper transmission gear range for a particular driving condition.
6	R - Reverse	Used for backing up. Reverse has only one gear. The M911 Truck Tractor must be compietely stopped before you shift from a forward gear range to reverse or from reverse to a forward gear range.
7	N - Neutral	Used for starting engine and parking. If you park with the engine running, put the selector lever in neutral and apply parking brake.
8	D - 2nd through 5th gear range	Used for normal driving conditions and winch operations. Vehicle starts in 2nd and automatically upshifts through 3rd, 4th, and 5th gears as speed increases. Automatically downshifts as speed decreases.

TA220794

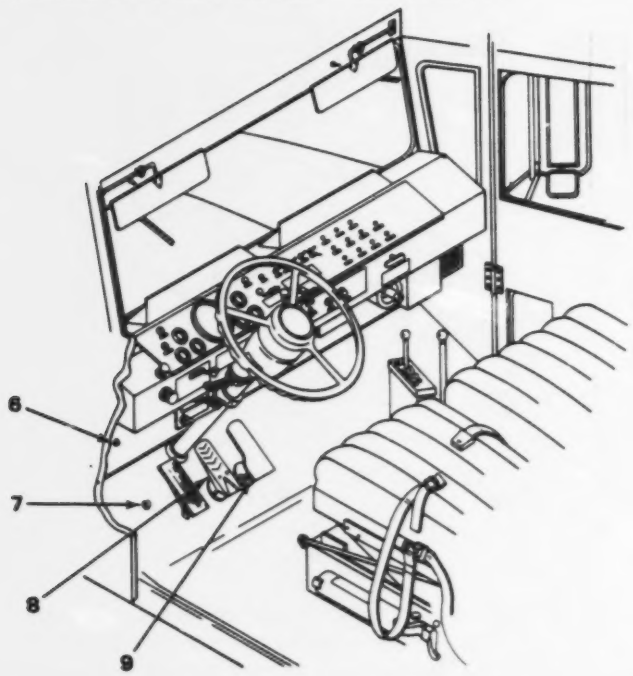
CAB FLOOR-MOUNTED CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	MAIN TRANSMISSION RANGE SELECTOR LEVER available gear selection ranges - continued	
2	4-2nd through 4th gear range	Used when needed to limit automatic shifting to a lower range because of road conditions. Range 4, 3, 2, and 1 give increasingly greater engine braking and hydraulic retarder action. The lower the gear range, the greater the braking, power, and retarding effects. When conditions go back to normal, select D position.
3	3-2nd and 3rd gear range	Used to restrict automatic shifting to the 2nd and 3rd gear range.
4	2-2nd gear	Used for driving through ice and snow, or for driving up steep grades. No automatic shifting will occur in this position (unless engine overspeed occurs).
5	1-1st gear	Used to get greatest pulling power, engine braking, and hydraulic retarder effect.

TA220795

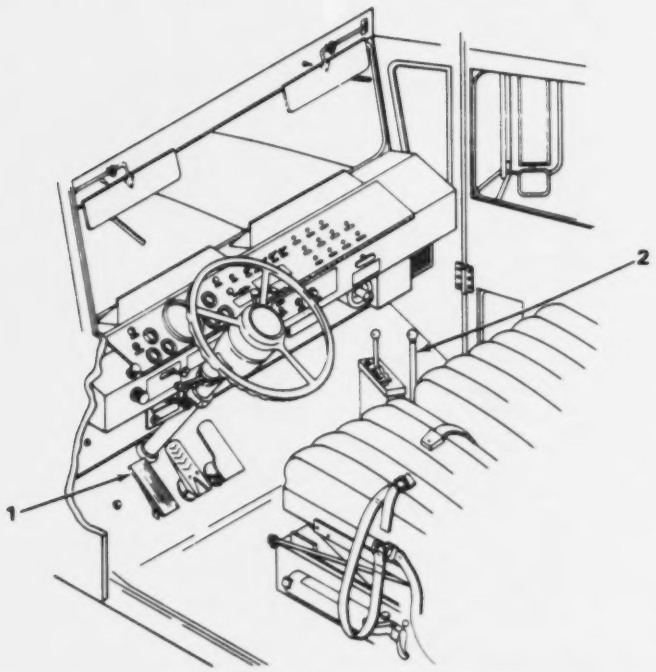
CAB FLOOR-MOUNTED CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
6	WINDSHIELD WASHER VALVE	Push down with your foot to activate windshield washer. Release foot pressure to turn off washer.
7	HEADLIGHT DIMMER SWITCH	Push all the way down with your foot and release to switch headlights to high beam. Push all the way down and release again to dim headlights.
8	SERVICE BRAKE PEDAL	Push down with your foot to apply service brakes on your M911 Truck Tractor. If your M911 Truck Tractor is properly coupled to a trailer, the trailer service brakes will also be applied when you use your truck's service brake pedal.
9	ACCELERATOR PEDAL	Push down slowly with your foot to increase engine speed to start truck moving.

TA220796

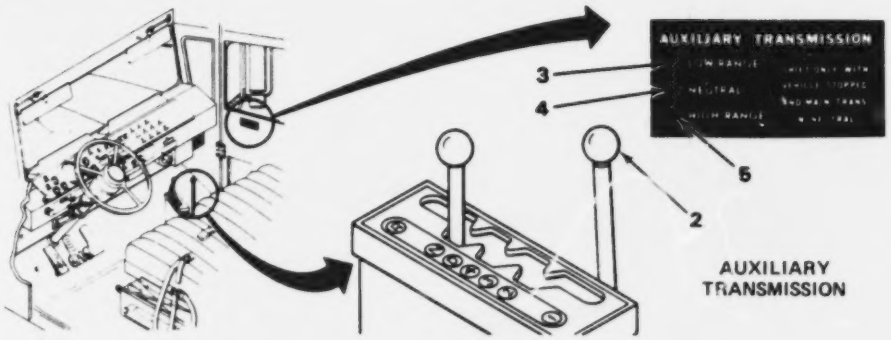
CAB FLOOR-MOUNTED CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION Avoid unnecessary use of the retarder pedal. Use this pedal only to help slow your truck on curves or downgrades. Do not rest your foot on this pedal during normal driving. Long continuous use of the retarder pedal will raise transmission fluid temperature to and beyond the safe limit, and cause transmission damage.	
1	HYDRAULIC RETARDER PEDAL	Helps to slow truck on downgrades or curves. Has greatest effect in the lowest transmission gear ranges. Push down with foot to apply. Do not hold for long periods. Make sure that throttle is closed when you use the retarder.
2	AUXILIARY TRANSMISSION SHIFT LEVER	Shifts auxiliary transmission into one of two ranges (LOW or HIGH) or into NEUTRAL. Refer to following illustration for detailed instructions for correct use.

TA220797

CAB FLOOR-MOUNTED CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
2	AUXILIARY TRANSMISSION SHIFT LEVER – CONTINUED	

CAUTION

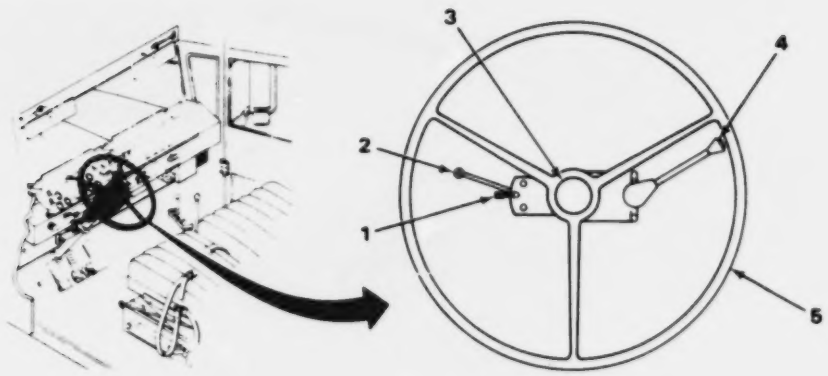
Never shift the auxiliary transmission while the M911 Truck Tractor is moving. Stop the truck, put the main transmission in neutral, let the engine idle, then shift the auxiliary transmission to the range you need as transmission damage may result.

The following are available selection ranges:

3	LOW RANGE	Used for severe load and grade conditions, and for off-road operations. Helps main transmission drive ranges give greater working power to wheels.
4	NEUTRAL	Used to take auxiliary transmission out of gear. Position used for winching operation.
5	HIGH RANGE	Used for all normal driving operations.

TA220798

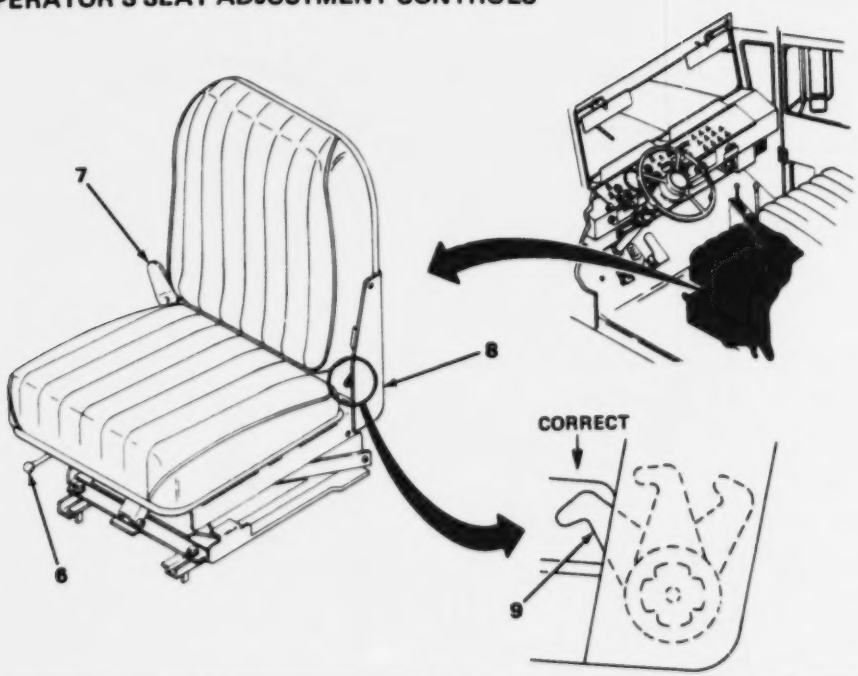
STEERING WHEEL AND COLUMN-MOUNTED CONTROLS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	EMERGENCY FLASHER CONTROL	Pull out to turn on emergency flashers. Push turn signal lever up or down and return it to center to turn off emergency flashers.
2	TURN SIGNAL LEVER (SHOWN APPLIED FOR RIGHT SIGNAL)	Push up to turn on right turn signal. Pull down to turn on left turn signal. Return to center position when turn is completed.
3	HORN BUTTON	Push on button to sound electric horn.
	CAUTION After use, always return trailer brake hand control to its off position, or trailer brakes will burn up.	
4	TRAILER BRAKE HAND CONTROL	Pull down to apply trailer brakes only. Use for stopping on slick surfaces and to help keep trailer from jackknifing. Be sure to return control to its off position (all the way up).
5	STEERING WHEEL	Rotate clockwise to turn front wheels to the right. Rotate counterclockwise to turn front wheels to the left.

TA220799

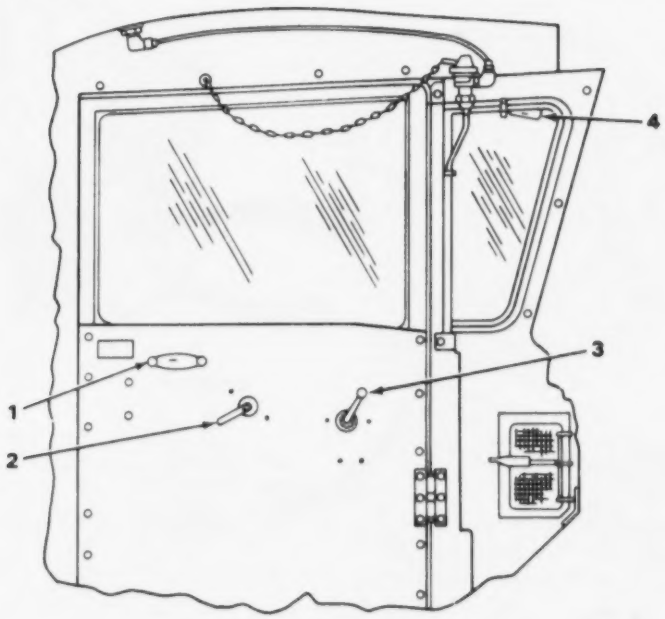
OPERATOR'S SEAT ADJUSTMENT CONTROLS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
6	FORWARD/BACKWARD ADJUSTMENT CONTROL	Use this control to move seat forward or backward on its slides.
7	TORSION BAR ADJUSTMENT CONTROL	Use this control to adjust torsion bar preload to your weight. When torsion bar is properly adjusted (refer to 9, below), you will be positioned midway in the seat suspension.
8	BACKREST ANGLE ADJUSTMENT CONTROL	Lift up on backrest and move this stop to one of three positions to set backrest angle.
9	RIDE LEVEL INDICATOR (LOCATED INSIDE LEFT FRAME UPRIGHT)	Indicates when you have correctly adjusted torsion bar for your weight. If torsion bar has too much or too little preload, the indicator will tilt forward or backward. Adjust preload until the indicator is in the correct position as shown in illustration above.

TA220800

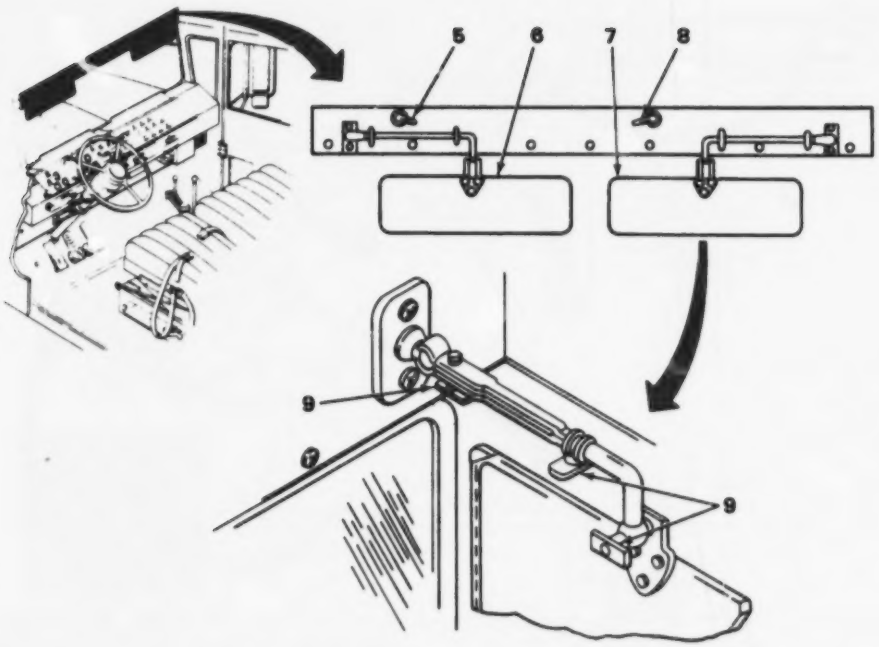
CAB CONTROLS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	DOOR PULL (one on each door)	Pull handle toward you to close cab door from the inside.
2	DOOR INSIDE HANDLE (one on each door)	Push downward to open cab door from the inside. Push up to lock.
3	DOOR WINDOW GLASS REGULATOR HANDLE (one on each door)	Rotate left regulator clockwise to lower left window glass, counterclockwise to raise left window glass. Rotate right regulator counterclockwise to lower right window glass, clockwise to raise right window glass.
4	VENT WINDOW HANDLE (one on each vent window)	Rotate handle clockwise to its stop on left vent window or counterclockwise to its stop on right window. Then push outward on handle to open vent window. Pull inward to close vent window.

TA220801

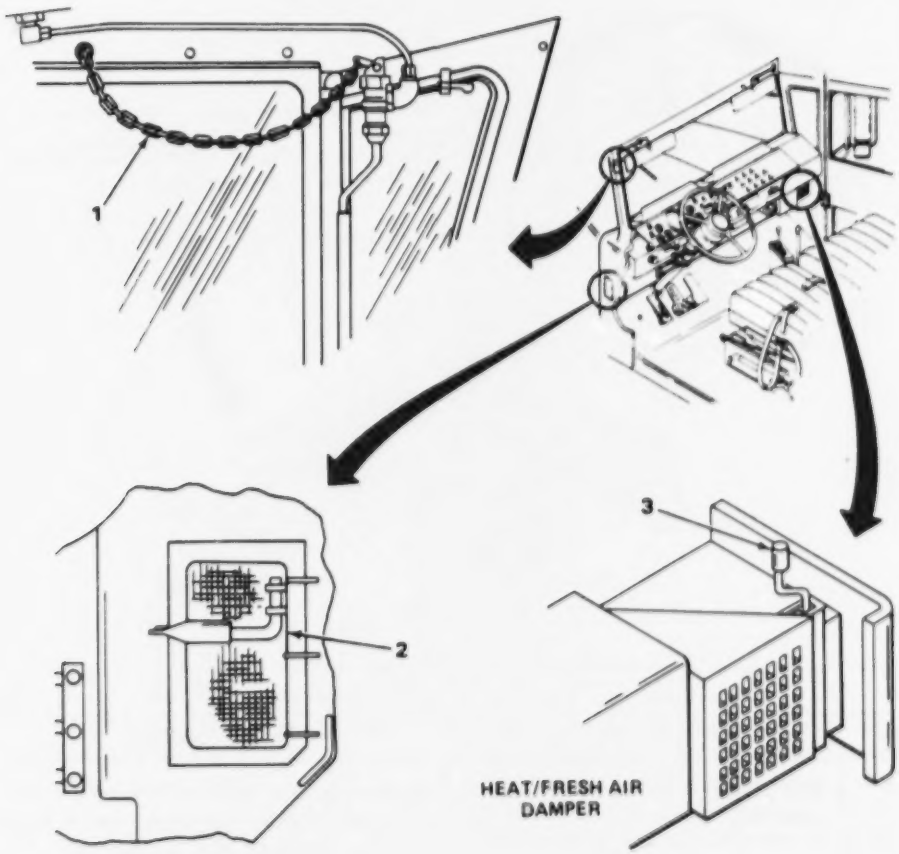
CAB CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
5	WINDSHIELD WIPER MANUAL CONTROL (left)	In the event that wiper controls on the instrument panel do not activate wipers, move this lever back and forth to manually operate left wiper.
6	SUN VISOR (left)	To move visor into position to shield your eyes from bright sunlight and glare, loosen one or more of the three adjustment knobs (9), position as desired, and tighten knobs (9).
7	SUN VISOR (right)	Same as item 6.
8	WINDSHIELD WIPER MANUAL CONTROL (right)	Same as item 5.

TA220802

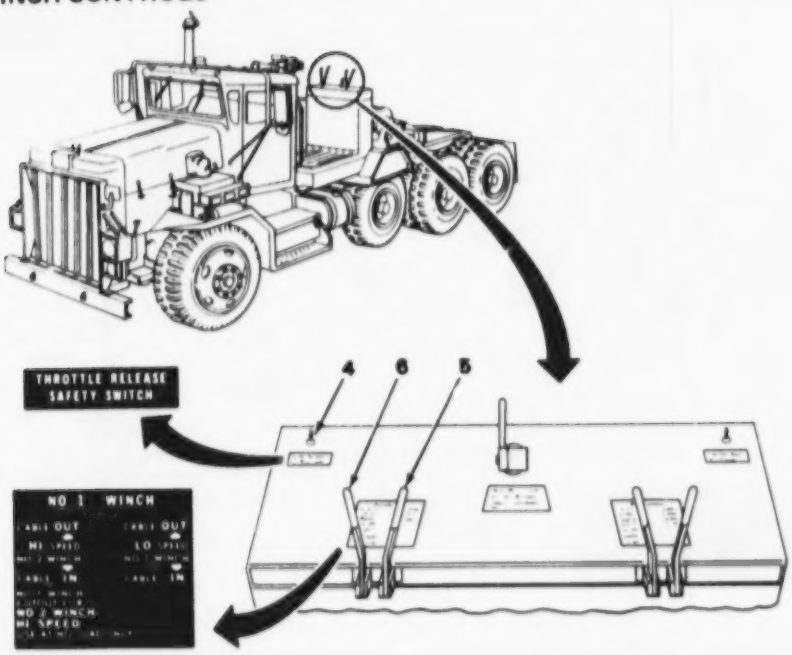
CAB CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
1	AIR HORN CHAIN	Pull downward to sound air horn when engine is running; release to silence air horn.
2	CAB FRESH AIR LOUVER LEVER (left front cab wall)	Pull lever toward you to open louver. Push lever away from you to close louver.
3	HEAT/FRESH AIR DAMPER LEVER (right side of cab at heater box).	Pull lever toward you to allow fresh air to enter the cab through the heater box. Push lever away from you to recirculate cab air through heater box. To get a mixture of air, move lever to an intermediate position.

TA220803

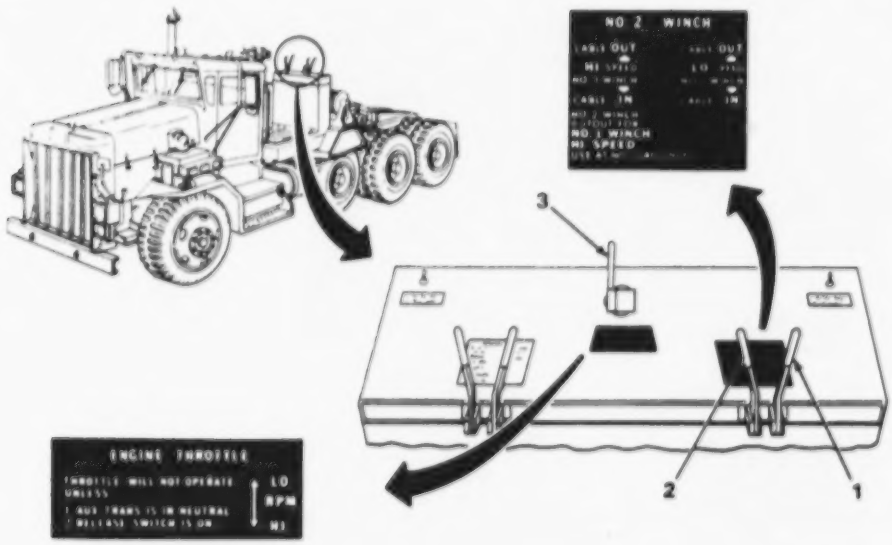
WINCH CONTROLS



KEY	CONTROL OR INDICATOR	FUNCTION/USE
4	THROTTLE RELEASE SAFETY SWITCH	With auxiliary transmission in NEUTRAL position, main transmission in D (2-5), and PTO engaged, move this switch to ON position to ready ENGINE THROTTLE for operation. Return switch to OFF position when ENGINE THROTTLE is not in use.
		CAUTION Use high speed at no load only. Damage to winch can occur.
5	LOW SPEED LEVER (For number 1 winch)	To operate number 1 winch at low speed, move this lever forward to pay out cable, or backward to take up cable.
6	HIGH SPEED LEVER (For number 1 winch)	To operate number 1 winch at high speed, use this lever and number 1 winch low speed lever (5) at the same time. Move both levers forward to pay out cable, or backward to take up cable.

TA220804

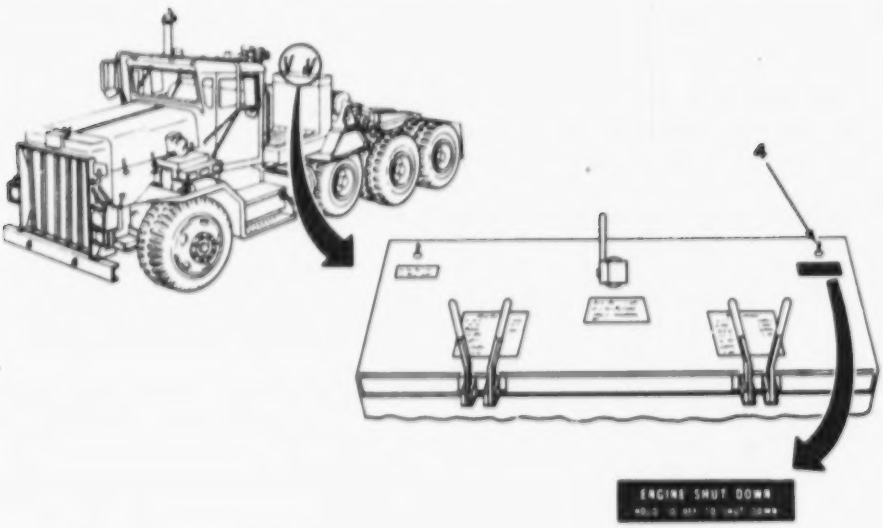
WINCH CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
	CAUTION	
	Use high speed at no load only. Damage to winch can occur.	
1	LOW SPEED LEVER (For number 2 winch)	To operate number 2 winch at low speed, move this lever forward to pay out cable, or backward to take up cable.
2	HIGH SPEED LEVER (For number 2 winch)	To operate number 2 winch at high speed, use this lever and number 2 winch low speed lever (1) at the same time. Move both levers forward to pay out cable, or backward to take up cable.
	NOTE	
	The ENGINE THROTTLE will not operate unless the auxiliary transmission is in NEUTRAL position, main transmission is in D, and the throttle release safety switch is in ON position.	
3	ENGINE THROTTLE	Pull throttle backward to increase engine speed. Push throttle forward to decrease engine speed, and winch speed.

TA220805

WINCH CONTROLS – CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION/USE
4	ENGINE SHUTDOWN	To shut down engine from winch control panel, push this switch backward and hold it in this position until engine shuts down. Then release the switch.

TA270806

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

This section contains PMCS for the M911 Truck Tractor. The table lists checks, services, and criteria to ensure that the vehicle is repaired for operation. Perform the checks and services in Table 2-1 at the specified intervals, keeping in mind the following guidelines.

1. Do (B) preventive maintenance just before operating the equipment. Pay attention to cautions and warnings.
2. Do (D) preventive maintenance during operation (during operation means to monitor the equipment while it is actually being used).
3. Do (A) preventive maintenance right after operating the equipment. Pay attention to the cautions and warnings.
4. Do (W) preventive maintenance weekly.
5. Do (M) preventive maintenance once a month.

	Page		Page
PMCS Column Description	2-32	PMCS Procedures	2-29
Preventive Maintenance	2-32	Special Instructions	2-30

PMCS PROCEDURES

Always do preventive maintenance in the same order. The pattern will become a habit, and with practice, anything wrong will be seen in a hurry.

If something does not work or is not right, troubleshoot it with the instructions in this manual and notify your supervisor.

If something looks wrong and you cannot fix it, write it on DA Form 2404 and notify your supervisor. Do not accept or operate a M911 Truck Tractor with a discrepancy in the "Equipment is not ready/available" column.

Make sure you read the following before you start your PMCS.

1. Take along tools and cleaning cloths needed to make the required checks.

WARNING

Dry cleaning solvent is flammable. Do not use near open flame or high temperatures. Flash point temperature is 138°F (58°C). Injury to personnel and damage to equipment may result.

2. Keep it clean. Dirt, grease, oil and debris get in the way and may cover up a serious problem. Clean while working as needed. Use dry cleaning solvent (Item 21, Appendix D) to clean metal surfaces. Use soap (Item 2, Appendix D) and water when you clean rubber or plastic material.
3. Bolts, nuts, and screws. Check them all for obvious looseness, missing, bent, or broken condition. Do not try them all with a tool, but look for chipped paint, bare metal, or rust around bolt head. If you find one loose, report it to organizational maintenance.
4. Welds. Look for loose or chipped paint, rust, or gaps where parts are welded together. If a bad weld is found, report it to organizational maintenance.
5. Electrical wires and connectors. Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and make sure the wires are in good shape.
6. Hoses and fluid lines. Look for wear, damage, leaks, and make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, report it to organizational maintenance.

SPECIAL INSTRUCTIONS (PMCS)

a. It is necessary for you to know how fluid leakage affects the status of equipment. The following are definitions of the types/classes of leakage to help determine the status of truck parts. Learn them and be familiar with each type leak. Remember – when in doubt notify your supervisor.

Leakage definitions:

CAUTION

Equipment operations is allowable with minor leakage (Class I or II). Consideration must be given to the fluid capacity in the item being checked/inspected. When in doubt, notify your supervisor.

When operating with class I or II leaks, continue to check fluid levels in addition to that required in PMCS. Parts without fluid will stop working and/or cause damage to the parts.

CLASS I – Seepage of fluid (as indicated by wetness or discoloration) not enough to form drops.

CLASS II – Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.

CLASS III – Leakage of fluid great enough to form drops that drip from the item being checked/inspected.

b. Removing Engine Compartment Side Panels and Opening Hood

1. Unhook four side panel and hood fasteners (1) from truck frame and hood panel (2) by pulling pull rings (3).

2. Raise hinged hook panel (2) and allow to rest on opposite hood panel.

3. Raise front of side panel (4) off of support (5) and slide forward to remove.

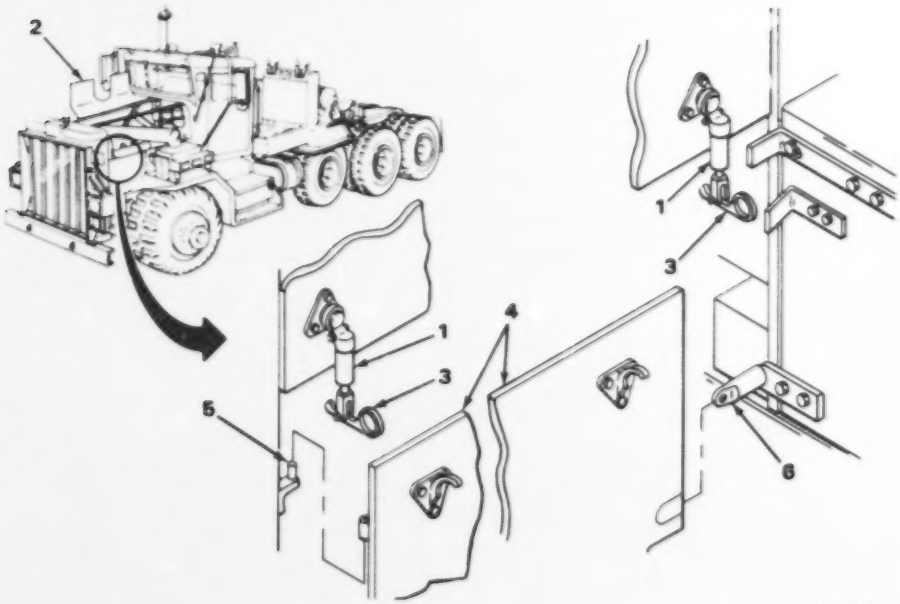
c. Installing Engine Compartment Side Panels and Securing Hood

1. Place side panel (4) into position and slide rearward onto support (6).

2. Raise front of side panel (4) and place on support (5).

3. Have the crew member raise hinged hood panel (2) from opposite side of engine compartment, to allow you to place it down over side panel (4).

4. Connect four side panel and hood fasteners (1), beginning with the lowest one, and pull ring (3) down to secure.



TA220307

PMCS COLUMN DESCRIPTION

a. Item number column shall be used as a source of item numbers for the TM number number column on DA Form 2404 Equipment Inspection and maintenance worksheet, in recording results of PMCS.

b. The Interval column tells when each check is to be performed.

c. The Item to Be Inspected column lists the checks to be performed.

d. The Equipment Is Not Ready/Available column has an entry only when the M911 Truck Tractor should not be operated or accepted with the malfunction.

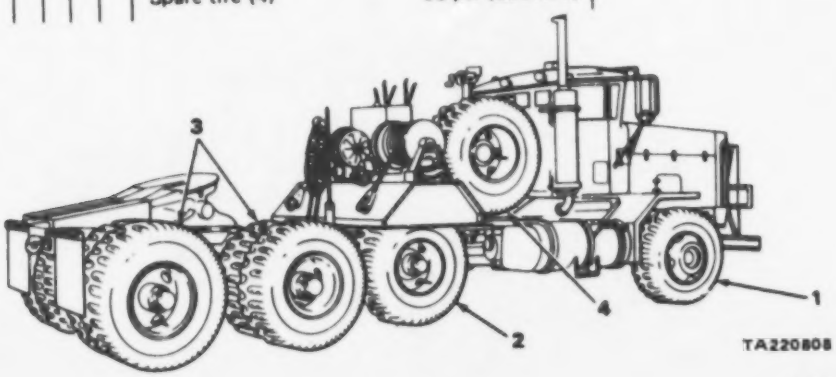
Operator/Crew Preventive Maintenance Checks and Services

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

Perform "weekly" as well as "before" PMCS if either of the following are true:

1. You are the assigned driver, but have not operated the truck since the last weekly PMCS.
2. You are operating the truck for the first time.

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
						MAKE THE FOLLOWING WALK-AROUND CHECKS:	
						NOTE After a long mission, make sure all tires are checked.	
1						TIRES	
				•		Check tires for correct air pressure: Front axle tires (1) 95 psi (650 kPa) Pusher axle tires (2) 95 psi (650 kPa) Tandem rear axle tires (3) 85 psi (580 kPa) Spare tire (4) 95 psi (650 kPa)	

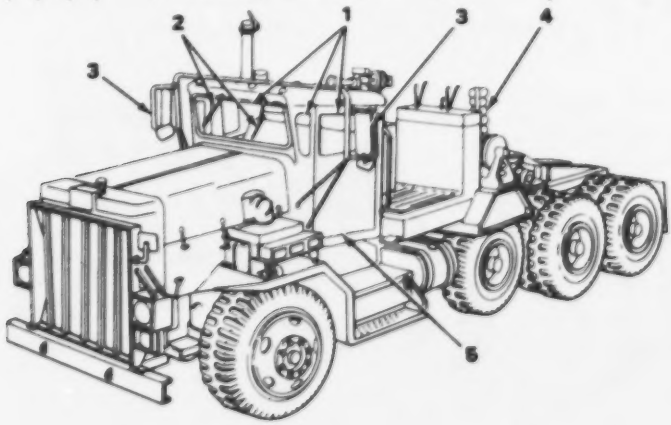


TA220808

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
2						EXTERIOR OF TRUCK	
				•		a. Check for body, undercarriage and components damage.	
	•					b. Check tires for cuts, and general condition.	Tires have cuts, gouges, or cracks which would result in tire failure. One or more tires unserviceable and no spare tire and wheel assembly (10) available.
	•					c. Look for evidence of fluid leakage (oil, fuel, brake fluid and water).	
						d. Check condition of:	
		•				(1) Windshield and windows (1)	
		•				(2) Windshield wiper arms and blades (2)	
		•				(3) Mirrors (2)	
	•					(4) Tractor to trailer air lines (3) for deterioration, cuts, and kinks.	
		•				(5) Check operation of doors (4)	

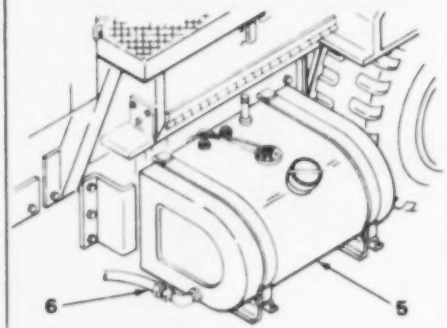


TA220809

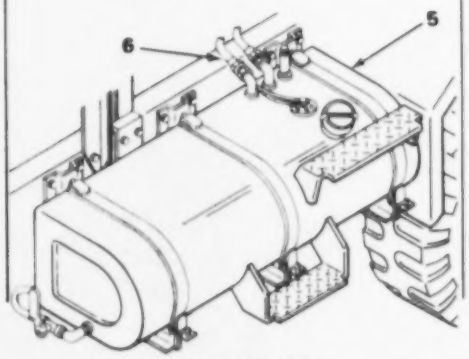
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
3						FUEL TANKS	
	•					Inspect fuel tanks (5) and lead-off lines (6) for leakage, breaks, bends and crimps.	Any leaks are detected.



LEFT FUEL TANK



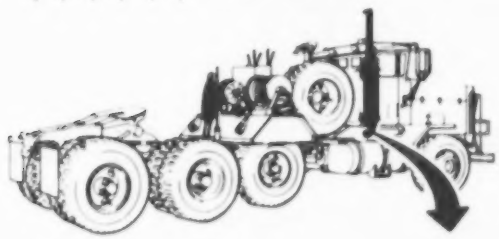
RIGHT FUEL TANK

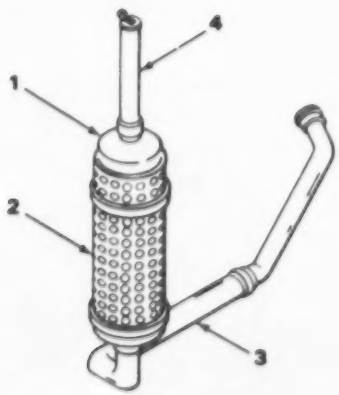
TA220810

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
4				•		EXHAUST SYSTEM Visually inspect the muffler (1), shield (2), exhaust pipes (3), flapper (4) for breaks, rust, bad bends, and security of hardware. Listen for audible leaks.	



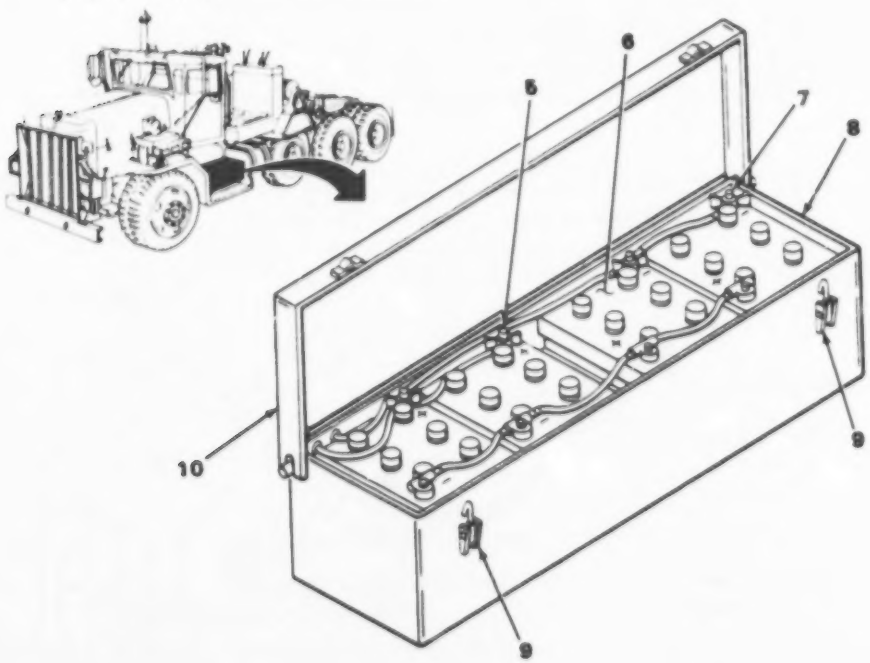


TA220811

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
5					•	BATTERIES a. Check terminals (5) for damage and corrosion. Inspect for obvious defects, such as cracked casing (6), burnt, broken and loose battery terminal posts (7).	
					•	b. Check battery compartment (8) for broken latches (9), cracks in the cover (10), and insure mounting hardware/bolts are tight. Clean with baking soda solution.	

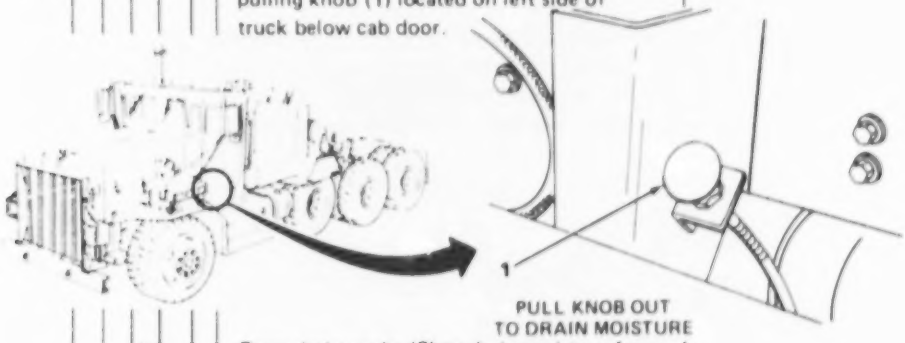


TA220812

Operator/Crew Preventive Maintenance Checks and Services – Continued

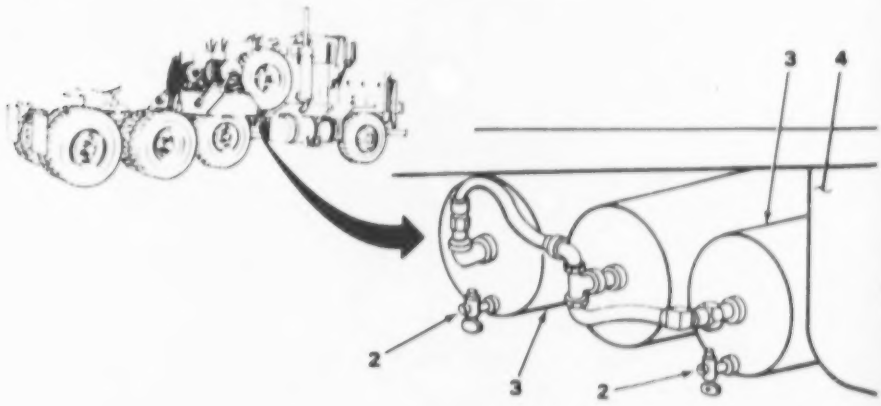
B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
6						AIR RESERVOIRS	
	•					Check for damage. Check for loose and damaged air lines and fittings.	Reservoir or lines leaking
			•			Drain moisture from main air system by pulling knob (1) located on left side of truck below cab door.	



PULL KNOB OUT TO DRAIN MOISTURE

			•			Open drain cocks (2) to drain moisture from rear of outside two reservoirs (3) found on right side under cab behind fuel tank (4).	

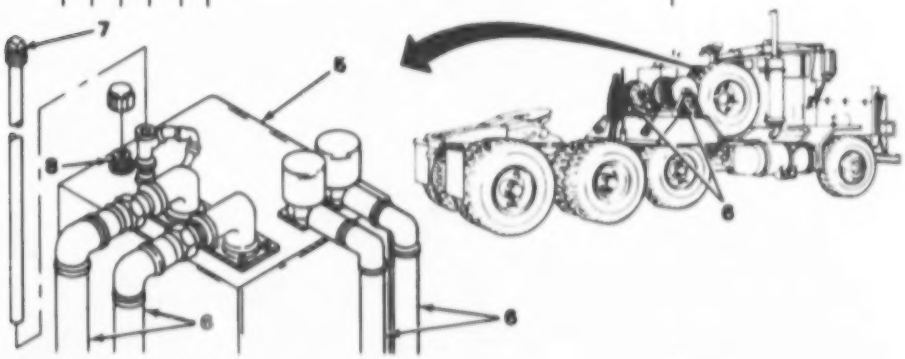


TA220813

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
7						HYDRAULIC RESERVOIR **WARNING** Do not remove fill cap when hydraulic fluid is hot. Hot fluid can cause severe injury.	
				•		Check for leaks or damage at the reservoir (5) and loose or damaged fittings and hoses (6). Check fluid level on dipstick (7). It should be at full mark. If necessary, add hydraulic fluid at filler neck (8) to bring level to proper mark on dipstick (7). Clean screen in filler neck (8).	Class III leakage evident



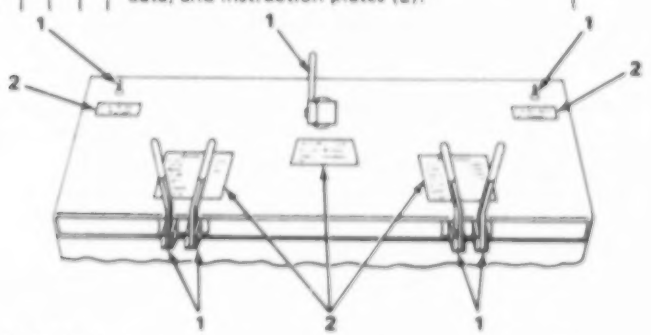
8						BEFORE WINCH OPERATION	
	•					Visually inspect winch hoses and lines for leakage and damage.	Class III leakage evident
					•	Check for secure connections.	

TA220814

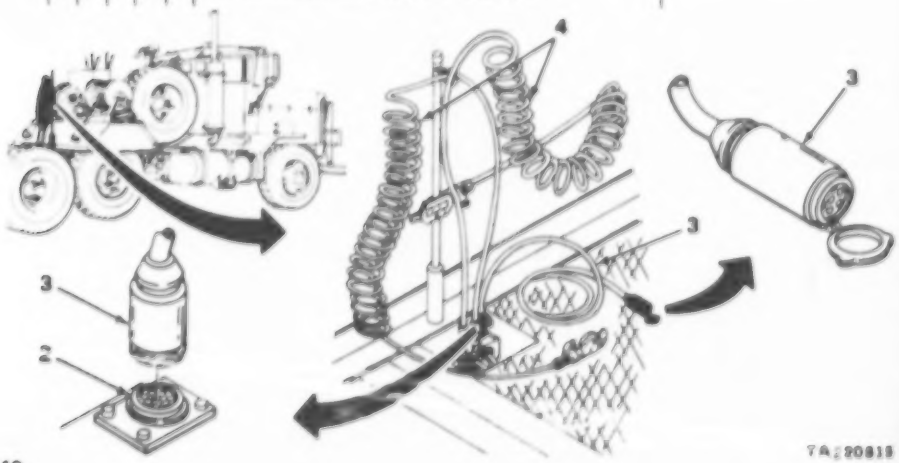
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
9						WINCH CONTROLS	
				•		Inspect controls (1) for damage.	
		•				Check for proper operation.	
		•				Check for missing and damaged warning, data, and instruction plates (2).	



10						SEMITRAILER COUPLINGS	
				•		a. Check electrical connector (3) and cable (4) for damage.	
				•		b. Check air lines (5) for damage.	

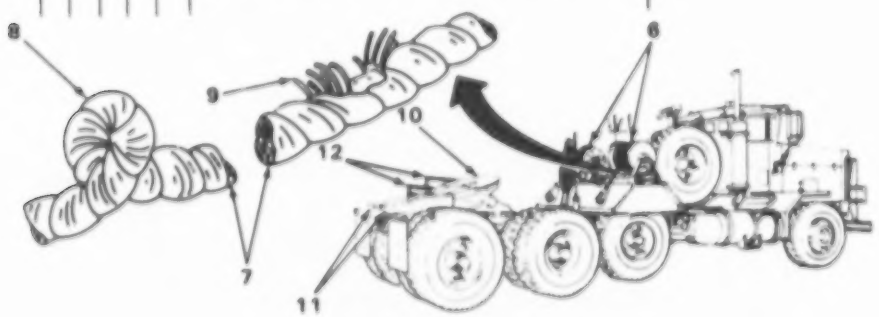


TA 220818

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
11		•				WINCH OPERATION Check operation of winches (6) while doing functional checks. Check cables (7) for kinks (8), frays (9), and breaks in the wire. During operation, check for oil leakage and adequate control response.	Class III leakage evident
12					•	FIFTH WHEEL AND RAMPS Check for missing fifth wheel (10) and ramps (11). Check for loose mountings at the frame. Check ramps (11) for loose mounting and damage. Check the primary and secondary release handles (12) for operation and damage.	Fifth wheel and/or ramps missing.

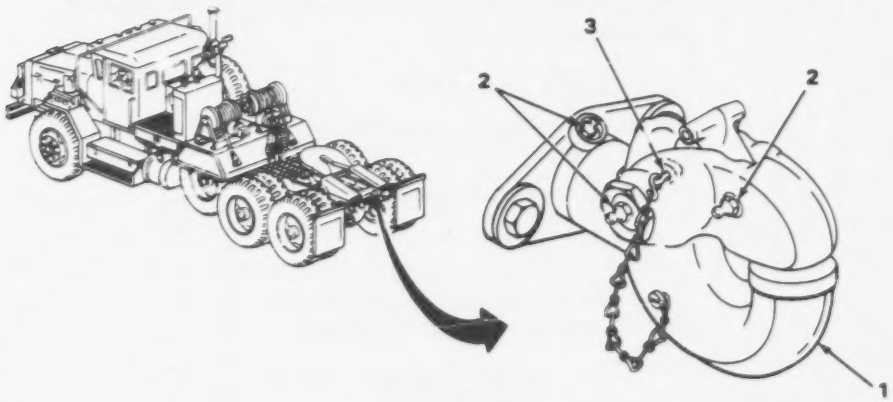


TA220816

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
13					•	PINTLE Check for looseness, binding, and damaged pintle (1). Check for missing, loose, and damaged grease fitting (2) or cotter pin (3).	



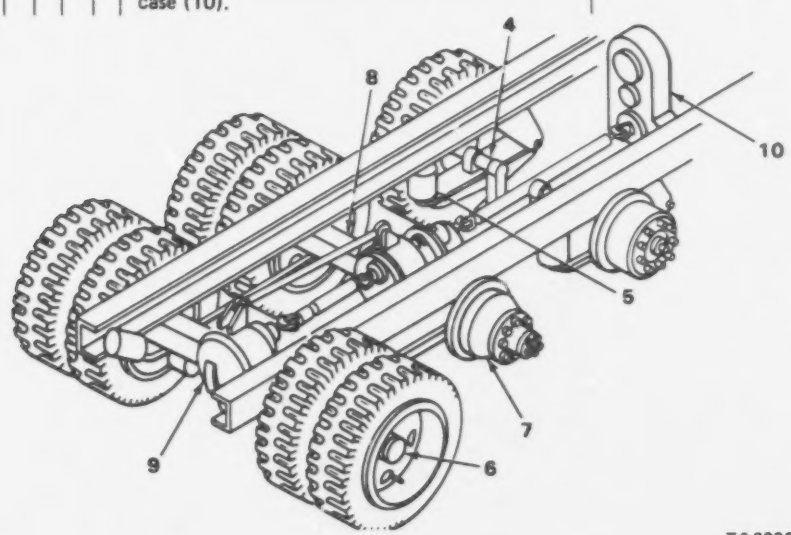
14	•					UNDERBODY Check thoroughly underneath the M911 Truck Tractor for leakage.	Class III leakage evident
				•		Check for dented, bent, kinked, cut, and broken components, (springs, brake chambers, prop shafts, oil pans, lines, hoses and their fittings, frame crossmembers, steering control system, etc.)	

TA220817

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
14						UNDERBODY – CONTINUED	
				•		Check the pusher axle (4) air suspension system components for damage. Note position of air bags (5). If twisted, they should be re-positioned.	
						WARNING Hubs, drums, axles, differentials, and transfer case may be very hot after operation. Do not check them with your bare hands.	
			•			Check for overheating of hubs (6), drums (7), axles (8), differentials (9), and transfer case (10).	

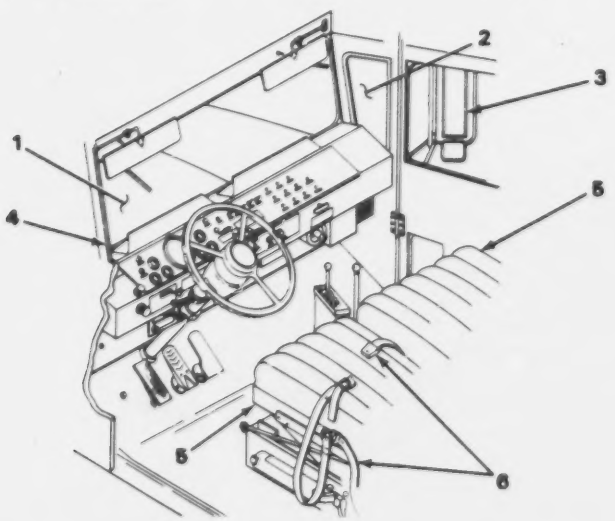


TA220618

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
15		•				CAB Windshield (1), windows (2), and mirrors (3). Check glass for cracks. Check seals (4), for leak stains, cracks and breaks. Check mirrors for looseness and improper adjustments.	
16		•				SEATS Check operator and crew seats (5) for loose mountings and damage. Make sure operator's seat is properly adjusted. Check for damaged and missing seat belts (6).	Missing or unserviceable seat belts (6).

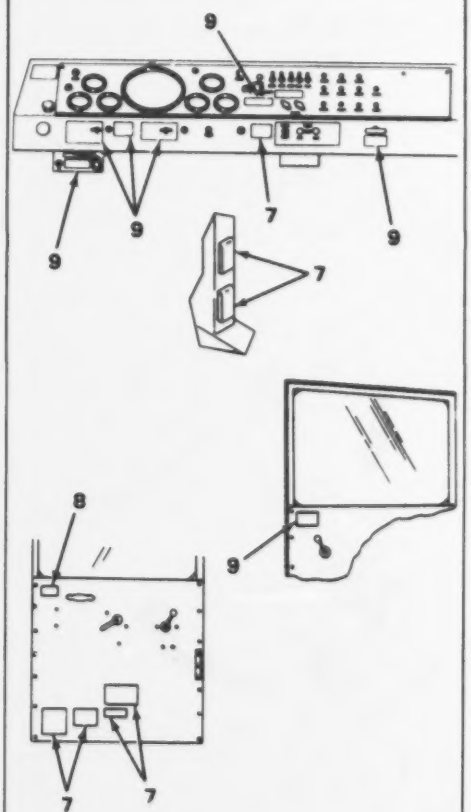


TA220819

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
17		•				DATA WARNING AND INSTRUCTIONS PLATES Check for damaged, illegible, and missing data (7), warning (8), and instruction (9) plates.	

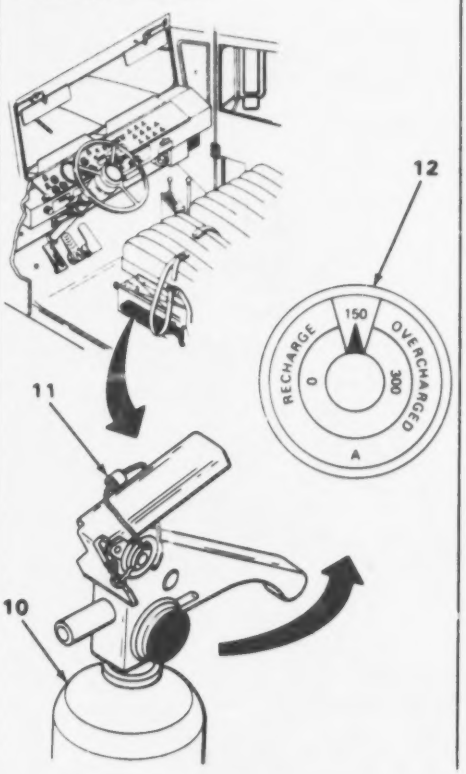


TA220820

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
18	•					FIRE EXTINGUISHER Check for missing and damaged fire extinguisher (10), and make sure seal (11) is not broken. Check page (12) for proper pressure (150 PSI/1300 kPa). Make sure the mounting bracket and strap are secure.	

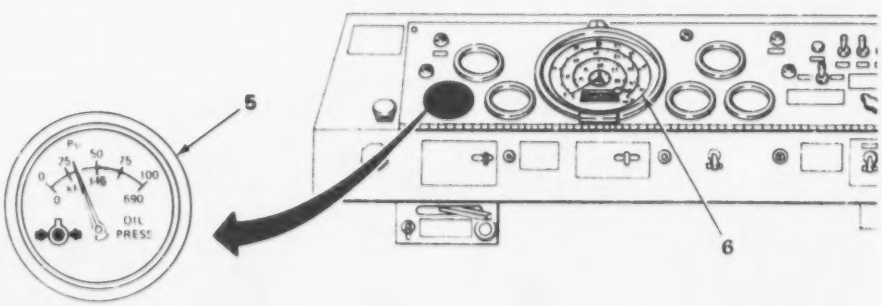


TA220821

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
19		•				INSTRUMENT GAGES, CONTROLS AND INDICATORS Check to make sure all gages, controls and indicators are operating properly and registering the proper readings.	
						Make sure oil pressure gage (5) indicates normal operating range at 1800 to 2100 rpm. Normal oil pressure is 50 to 70 psi (342 to 480 kPa) and minimum for safe operation is 30 psi (208 kPa).	Oil pressure gage not working.
						Check to make sure tachometer (6) is working.	Tachometer not working.

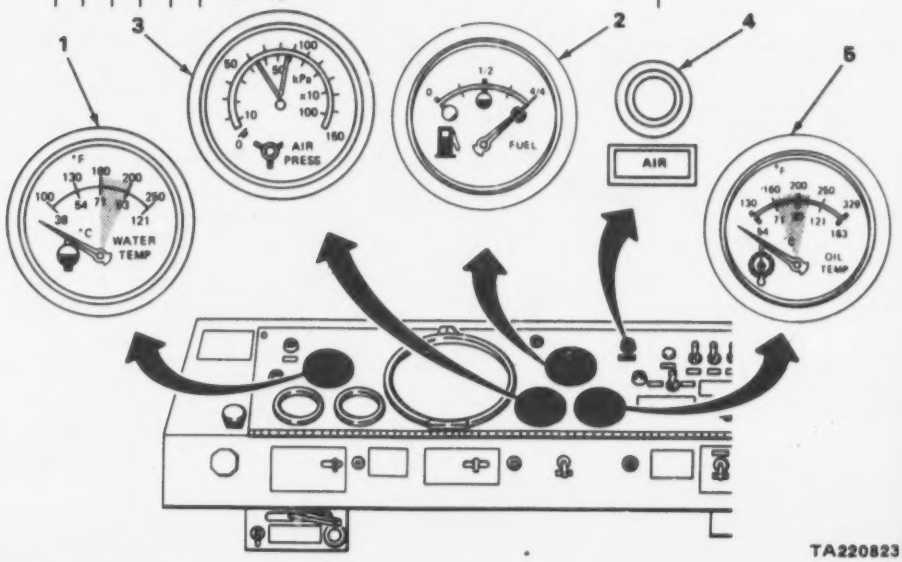


TA220822

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
19		•				INSTRUMENT GAGES, CONTROLS AND INDICATORS – CONTINUED Engine water temperature gage (1) should show normal operating temperature of 160° to 185°F (71° to 88°C) after warm up. Check fuel gage (2) and make sure tanks have enough fuel. Make sure air pressure gage (3) is working properly and that low air pressure warning light (4) and buzzer stay off when air system pressure is more than 60 psi (410 kPa). Main transmission oil temperature gage (5) normal range is 160° to 220°F (71° to 104°C).	Temperature gage, air pressure gage, or transmission oil pressure gage not working

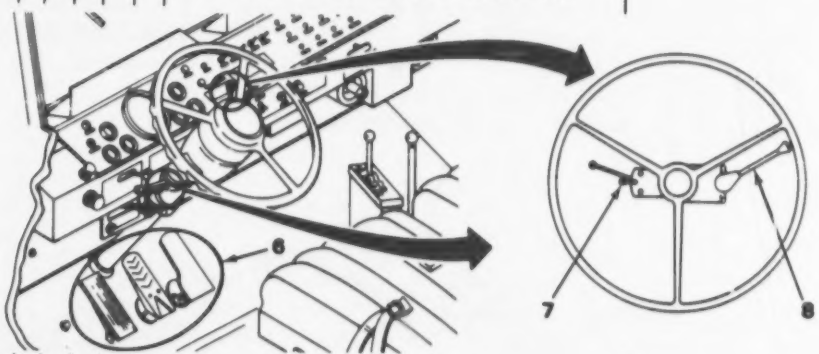


TA220823

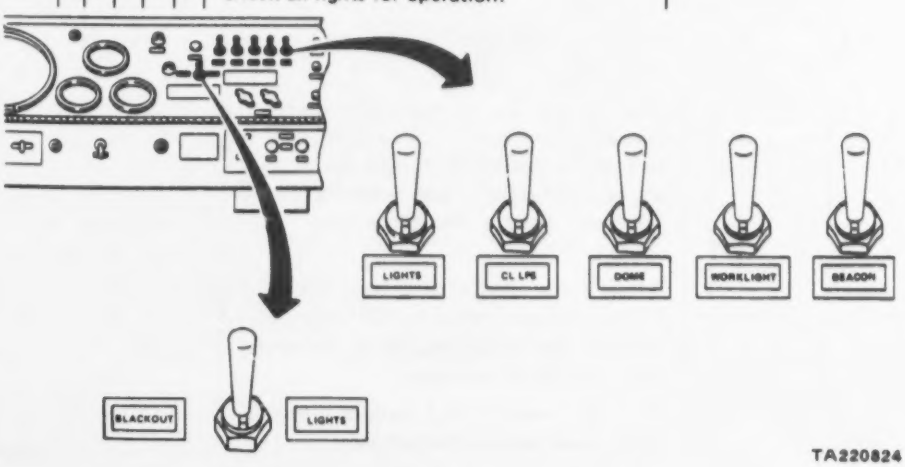
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
		•				Check all cab controls for proper operation.	
		•				Check foot controls (6) for proper operation.	
		•				Check emergency flasher control (7).	
		•				Check semitrailer brake hand control (8).	



		•				Check all lights for operation.	

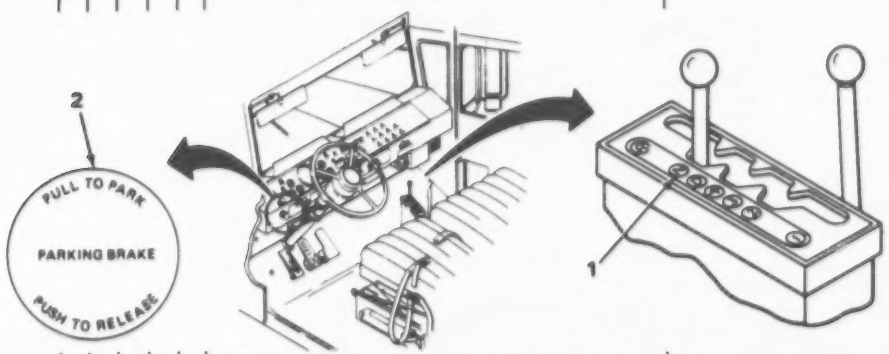


TA220824

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
20	•	•				MAIN TRANSMISSION When the main transmission has reached normal operating temperature range of 160° to 220°F (73° to 109°C), shift through the positions on the range selector (1) and return the lever to the N position. Make sure the truck is on level ground, and apply the parking brake (2).	Class III leakage evident, shifts roughly, slips, vibrates, is unusually noisy, or the hydraulic retarder is not properly operating.
						While the engine is running at idle speed, have assistant check the transmission oil level on the dipstick (3) at right rear of engine compartment. Safe operating level is between FULL and ADD marks on dipstick. If level is low, add OE/HDD 10 or MIL-L-10295 lubricating oil up to FULL mark on dipstick. See LO 9-2320-270-12. Be careful not to overfill transmission. If oil level is above FULL mark on dipstick, notify organizational maintenance.	

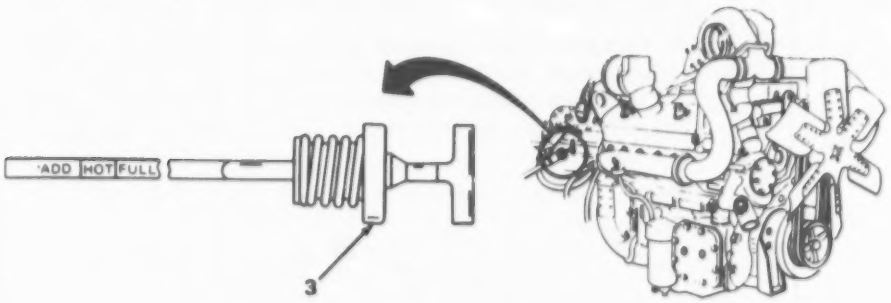


TA220825

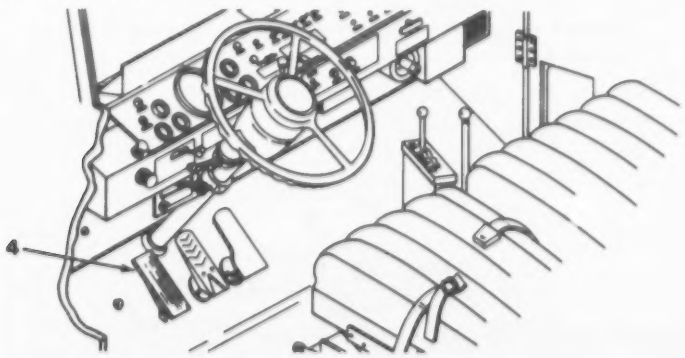
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:



						While driving, check transmission operation through all range selector positions, and check for proper action of the hydraulic retarder when applying pressure to retarder pedal (4).	



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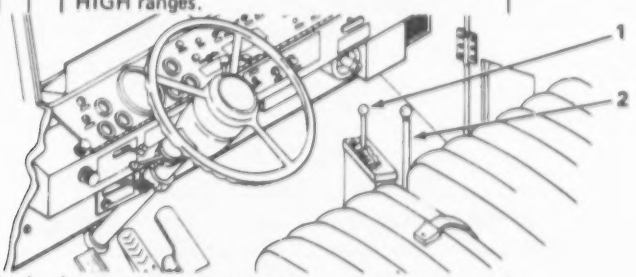
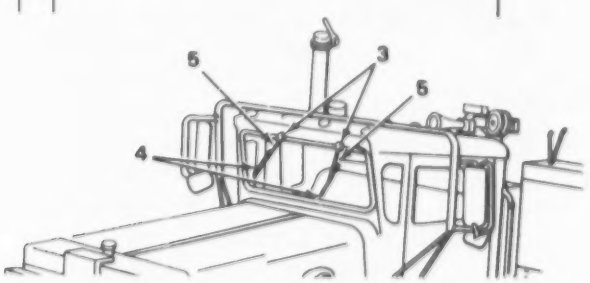
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
20		•				MAIN TRANSMISSION – CONTINUED With the M911 Truck Tractor stopped, the main transmission shift lever (1) in neutral, and the engine idling, check auxiliary transmission for proper operation of shift lever (2). While driving, check operation in LOW and HIGH ranges.	Auxiliary transmission is not shifting properly (shifts roughly, makes unusual noises or will not go into gear).
21		•				WINDSHIELD WIPERS Check both wipers (3) for proper operation. Check wiper blades (4) for damage and excessive wear. Check wiper arms (5) for looseness and damage.	





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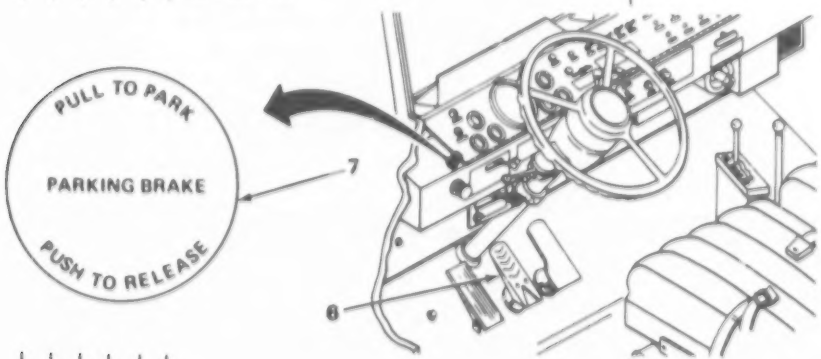
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
22		•				POWER STEERING OPERATION With the engine running, turn the steering wheel to the right and left checking for any unusual noise, binding or difficulty in steering.	Steering binds or is unresponsive.
23		•				BRAKES Check for chatter, noise, and side pull. Make sure that brakes (6) are operating properly. Check for proper operation of parking brakes (7).	Service or parking brakes do not operate properly.



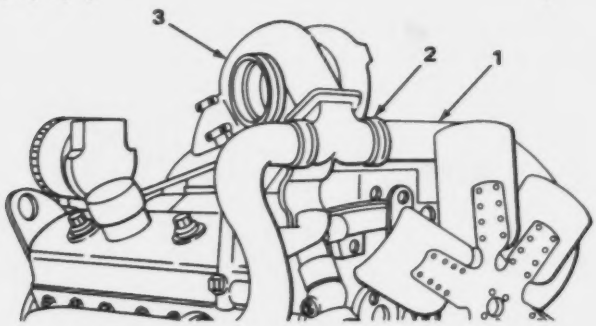
24	•					ENGINE COMPARTMENT General Component Check Visually check all engine compartment components for leaks, loose mountings, broken hoses, lines, and bare and broken wires.	Class III leakage evident.

TA220828

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
25						TURBOCHARGER	
				•		a. Inspect oil lines and fittings for signs of leaks or damage. Check air ducts (1) for loose bolts and clamps (2). Look for any signs of hose damage.	
			•			b. When you shut down the engine, listen to the turbocharger (3) for rattling noise.	Rattling noise is evident.

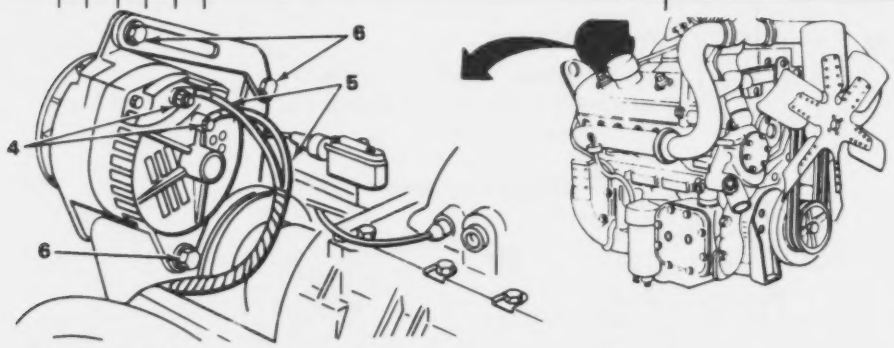
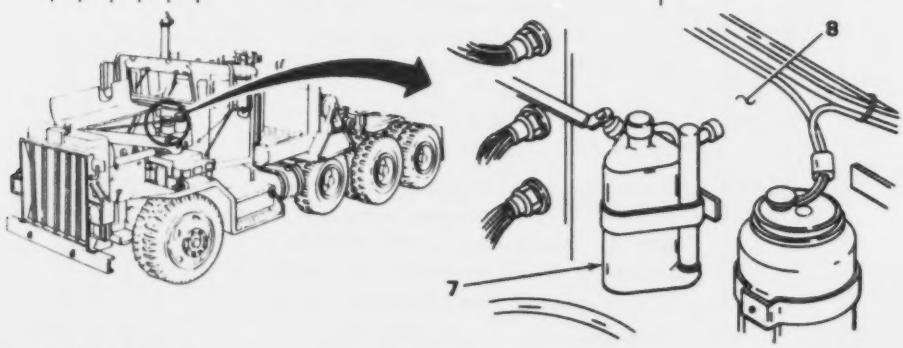


26						ALTERNATOR	
				•		Look for loose and damaged terminals (4). Inspect for bare wires (5), loose and missing mounting hardware (6).	

TA220829

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
							
27			•			ALCOHOL EVAPORATOR In freezing temperatures check level of alcohol in the evaporator (7). Fill as necessary with methenol. Alcohol evaporator is located on firewall (8).	
							

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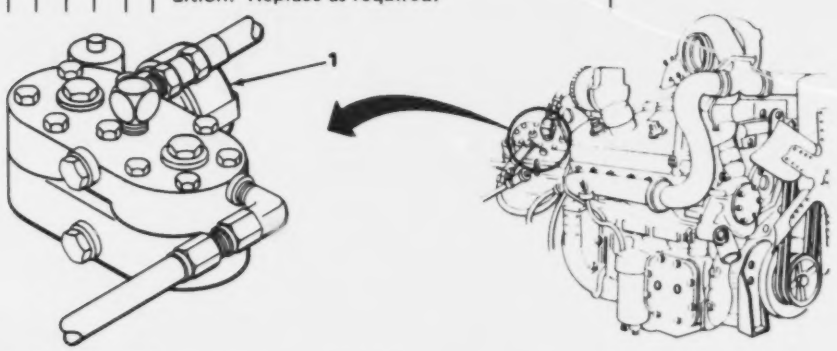
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
28				•		AIR COMPRESSOR Check for damage. Check the air cleaner filter element (1) for dirt and clogged condition. Replace as required.	
29				•		WINDSHIELD WASHER FLUID LEVEL Check to make sure windshield washer fluid reservoir (2) contains sufficient fluid. Add fluid if necessary. Reservoir will hold 2 gallon (3.87 L) of fluid.	
30				•		POWER STEERING FLUID LEVEL, LINES, AND CONNECTIONS Check fluid level in the power steering fluid reservoir (3) for proper level on the dipstick (4). If level is low, add OE/HDO 10 lubricating oil to bring level to FULL mark (5) on dipstick (4) (See LO 9-2320-270-12). Check lines and connections for leaks.	



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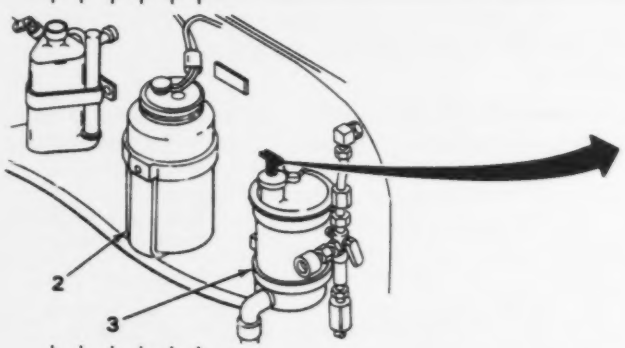
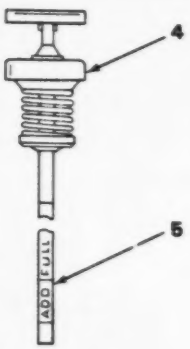
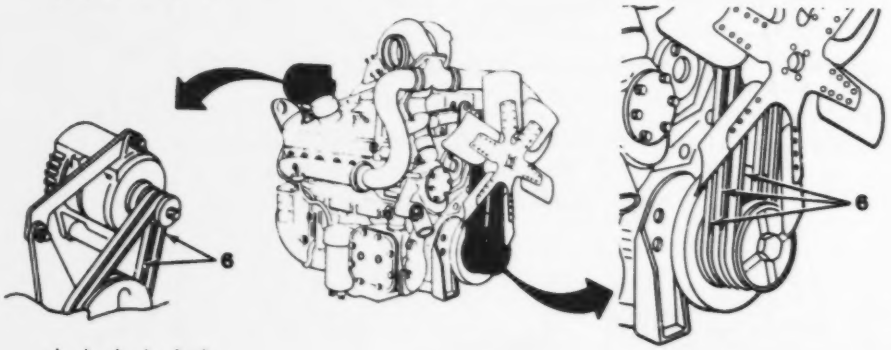
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
						 	
31				•		ALL BELTS Check for cracked, worn and frayed belts (6).	
							

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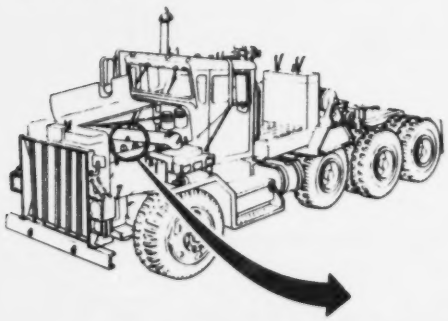
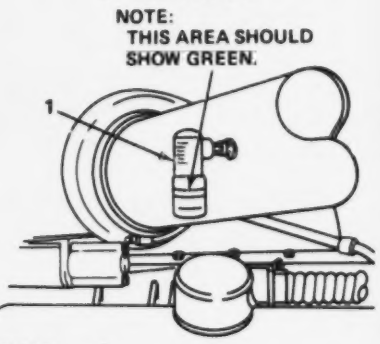
Operator/Crew Preventive Maintenance Checks and Services – Continued

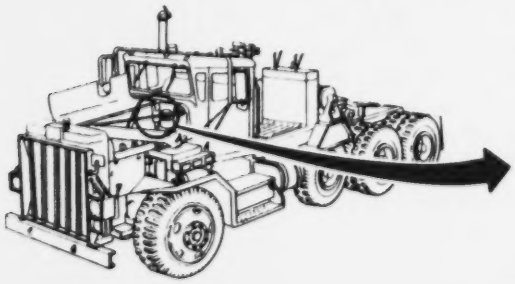
B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

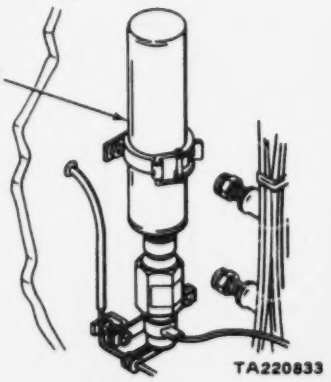
ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
32				•		AIR CLEANER RESTRICTION INDICATOR Check indicator for clogged air cleaner element (1). Red indicates clogging.	If indicator shows red, notify organizational maintenance.





ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
33	•					COLD WEATHER ETHER STARTING AID (COLD WEATHER ONLY) Check for loose or damaged mountings and linkages. Check canister (2) for damage.	

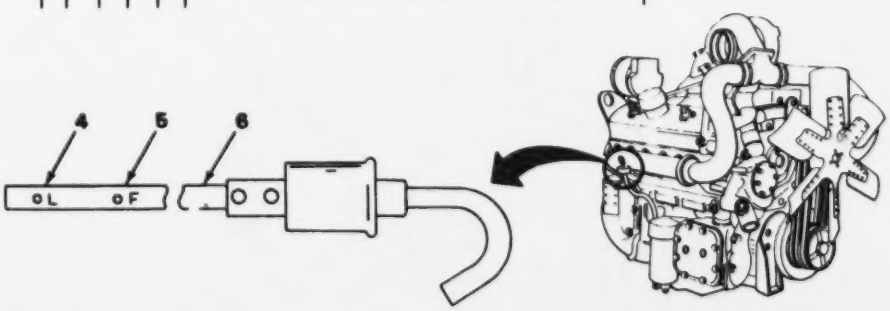




Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
34		•				COLD WEATHER STARTING AID (ENGINE OPERATION) **NOTE** Add fuel system icing inhibiter (Item 4, Appendix D) as required to insure that fuel is not contaminated with condensation. Mixture is 1 pt (0.47 liters) to 40 gal (150 liters) of fuel. Check for excessive exhaust smoke, unusual noises, rough running, or misfiring. Engine should run smoothly.	
35						ENGINE OIL	
	•					Check for presence of oil on dipstick (3). Level should be at the L (low) mark (4) or a little above.	Engine has used excessive amount of oil if 10 qts (9.4 liters) in 1,000 miles (1600 km) is used, or Class III leakage is noted.
		•				After engine has warmed up, stop the engine and check for proper oil level on the dipstick. Level should be between L (low) and F (full) marks (4) and (5).	

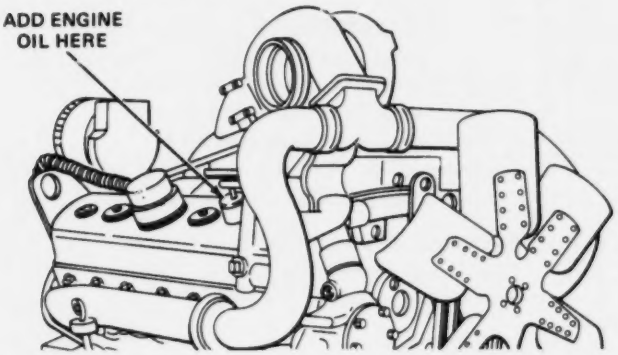


TA220834

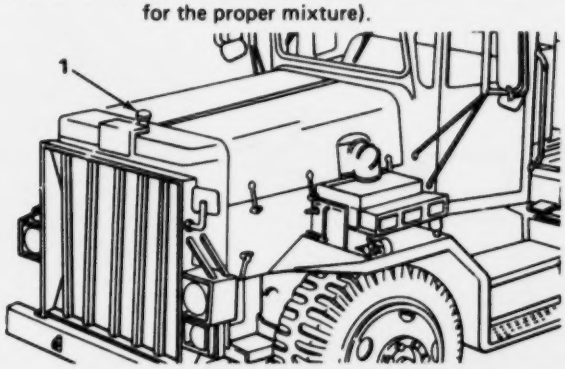
Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
35						ENGINE OIL – CONTINUED If engine oil level is too low, add proper grade of lubricant (see LO 0-2320-270-12). Do not overfill.	



36	•					ENGINE COOLANT Check coolant level at the radiator filler neck (1). Level should be approximately 1 inch (2.5 cm) from bottom of filler neck (1). If level is low, add a mixture of ethylene glycol antifreeze (Item 1, Appendix D) and clean water to bring coolant to proper level (check with organizational maintenance for the proper mixture).	

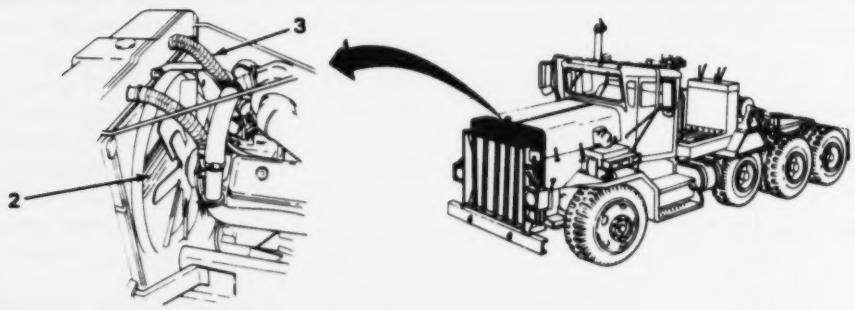


TA220835

Operator/Crew Preventive Maintenance Checks and Services – Continued

B-BEFORE D-DURING A-AFTER W-WEEKLY M-MONTHLY

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
37				•		RADIATOR Check for leaks, clogged or damaged fins (2), and loose or damaged hoses (3) to and from the engine.	



TA220836

Section III. OPERATION UNDER USUAL CONDITIONS

GENERAL

This section contains the procedures used in operating the M911 Truck Tractor, its components and equipment, stopping, parking, and engine shutdown. Guidelines are also given for adjusting control settings and what to do when driving to meet changing road and load conditions. Make sure you know these guidelines as well as the operating procedures so that you'll be able to respond to different situations as they happen.

	Page		Page
Coupling and Uncoupling	2-83	Starting and Warm-up at Temperatures Above 40°F (4°C)	2-64
Decals, Data Plates, and Instruction Plates	2-106	Starting and Warm-up at Temperatures Below 40°F (4°C)	2-68
Driving	2-71	Stopping the M911 Truck Tractor and Shutting Down the Engine	2-80
Fifth Wheel	2-82	Using Driveline Locking System	2-74
Initial Adjustments and Daily Checks	2-63	Using Engine Braking	2-73
Loading and Unloading	2-89	Using Hydraulic Retarder	2-74
Operating Winches	2-91	Using Pusher Axle	2-75
Operation of Auxiliary Equipment	2-100	Using Transmission Gear Ranges and Combinations	2-76
Parking	2-82	Using Trailer Brake Hand Control	2-74
Putting M911 Truck Tractor in Motion	2-78		

INITIAL ADJUSTMENTS AND DAILY CHECKS

Before you operate the M911 Truck Tractor, perform your Before (B) PMCS and do all the required adjustments.

Know the capabilities of the M911 Truck Tractor and do not make it exceed them.

Know how to use the gage, indicator, and control features of the M911 Truck Tractor in the safest manner.

STARTING AND WARM-UP AT TEMPERATURES ABOVE 40°F (4°C)

1. Adjust operator's seat (1) to a comfortable position while sitting in it, and fasten seat belts (2).

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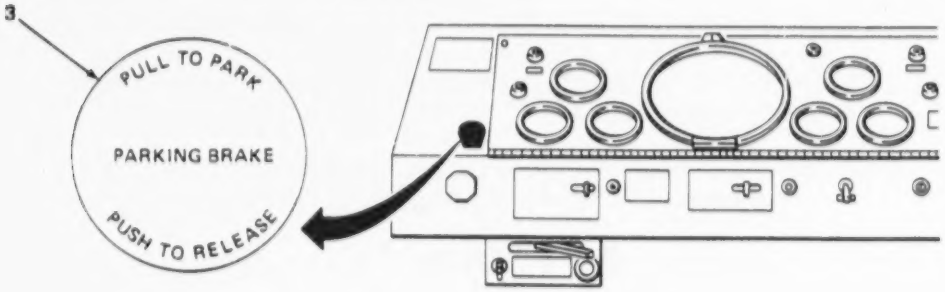
STARTING AND WARM-UP AT TEMPERATURES ABOVE 40°F (4°C) – CONTINUED

2. Pull out PARKING BRAKE control (3).

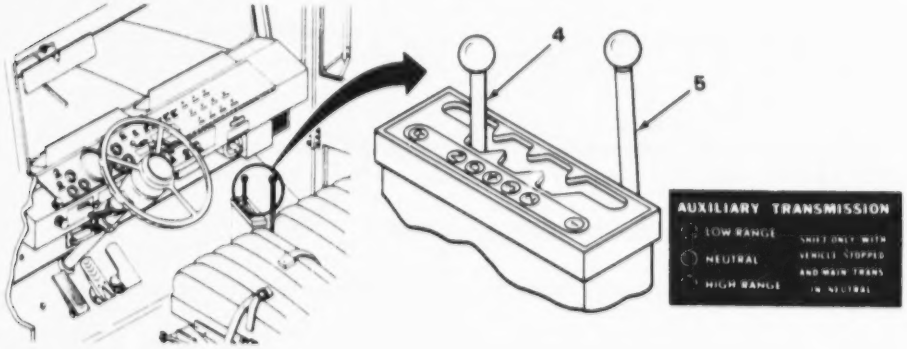


NOTE

A neutral safety switch will not permit starting engine while main transmission is in gear.

3. Place main transmission range selector lever (4) in neutral (N) position.

4. Place auxiliary transmission shift lever (5) in neutral.



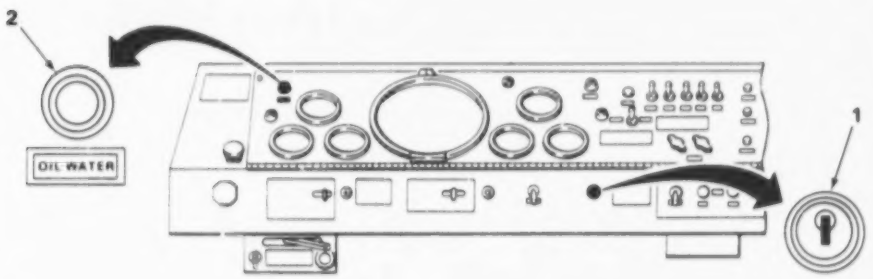
TA220838

STARTING AND WARM-UP AT TEMPERATURES ABOVE 40°F (4°C) – CONTINUED

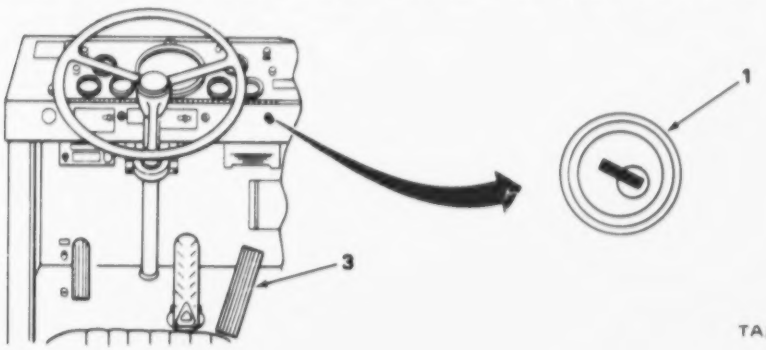
CAUTION

- If engine fails to start within 30 seconds, discontinue cranking (release ignition key switch) to prevent overheating starter motor. Allow starter motor to cool 1 to 2 minutes before cranking again. If engine fails to start in four tries, notify Organizational Maintenance.
- Do not rotate ignition switch key to start position while starter motor is still turning from previous try. This could result in serious damage to starter motor.

5. Rotate ignition switch (1) key to ON position.
6. Check that low OIL pressure/high WATER temperature warning light (2) is on and listen for buzzer sound.



7. Slightly depress accelerator pedal (3) and rotate ignition switch (1) key to START position.
   a. If engine starts, release key immediately.
   b. If engine fires but does not start, release key immediately and try again to start.



TA220839

STARTING AND WARM-UP AT TEMPERATURES ABOVE 40°F (4°C) – CONTINUED

CAUTION

Do not operate engine with low or no oil pressure. Engine will be damaged.

8. Check OIL PRESSure gage (4). If no oil pressure, or less than 50 psi (345 kPa) within 10 to 15 seconds, shut off engine immediately and notify Organizational Maintenance.

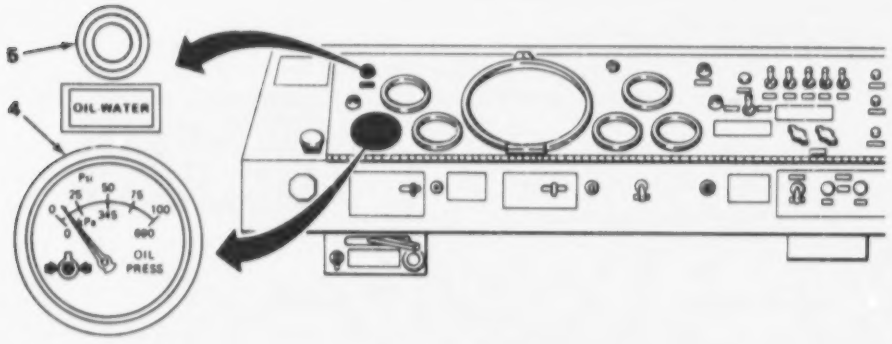
9. Make sure low OIL pressure/high WATER temperature warning light (5) is off. If light does not go off, shut off engine and notify Organizational Maintenance.

CAUTION

Do not accelerate the engine above low idle for 2 minutes after start to allow lubricant to flow to turbocharger and other engine components.

10. Run engine at low idle (600 rpm) for 2 minutes.

11. Increase engine speed to 1000 rpm and check OIL PRESSure gage (4). Run engine no load at 1000 rpm for 5 minutes. If engine is not maintaining 30 to 50 psi (206 to 344 kPa), shut engine off immediately and notify Organizational Maintenance.



CAUTION

Do not go to full throttle until WATER TEMPerature gage reads 140°F (60°C) to prevent damage due to not having enough engine cooling available until thermostat opens.

12. Engine is now ready for operation.

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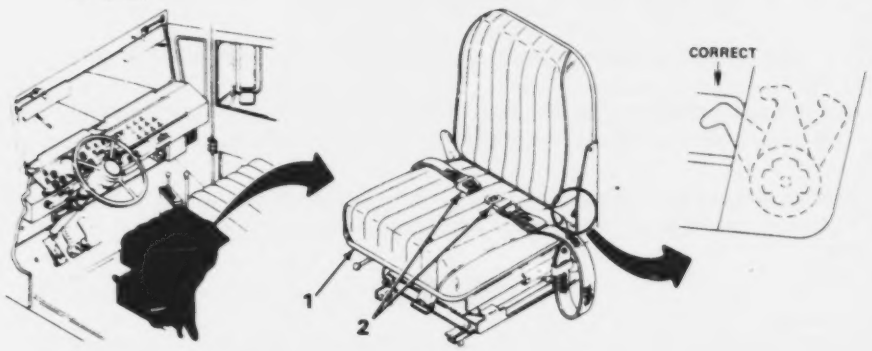
STARTING AND WARM-UP AT TEMPERATURES BELOW 40°F (4°C)

1. Adjust operator's seat (1) to a comfortable position while sitting in it, and fasten seat belts (2)



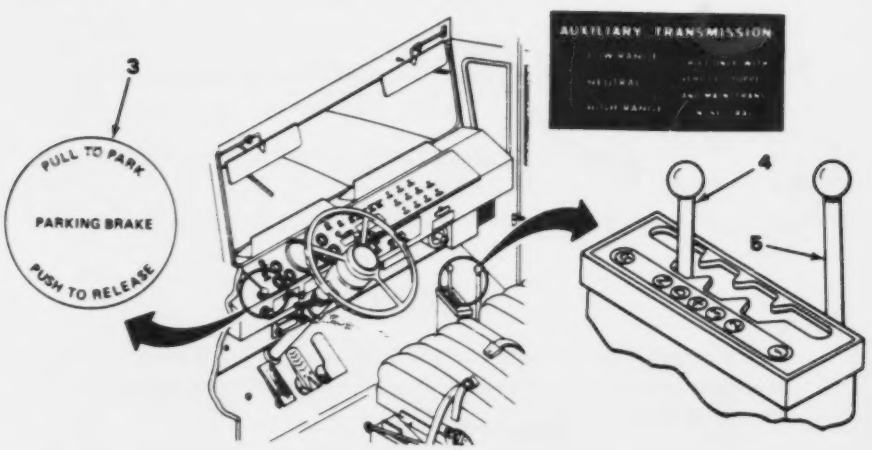
2. Apply PARKING BRAKE control (3).

NOTE

A neutral safety switch, in the auxiliary transmission control, will not permit starting engine while main transmission is in gear.

3. Place main transmission range selector lever (4) in neutral (N) position.

4. Place auxiliary transmission shift lever (5) in neutral.



TA220841

STARTING AND WARM-UP AT TEMPERATURES BELOW 40°F (4°C) – CONTINUED

5. Rotate ignition switch (6) key to ON position.

6. Check low OIL pressure/high WATER temperature warning light (7) on and buzzer sound. If not on, turn switch (6) off and notify Organizational Maintenance.

NOTE

Cold weather ether starting aid (quick start) is required at air temperatures below 40°F (4°C).

7. Pull quick start handle (8) out for 4 to 5 seconds to charge valve chamber.

8. Rotate ignition switch (6) key to START position and after 2 seconds, push quick start handle in while engine turns.

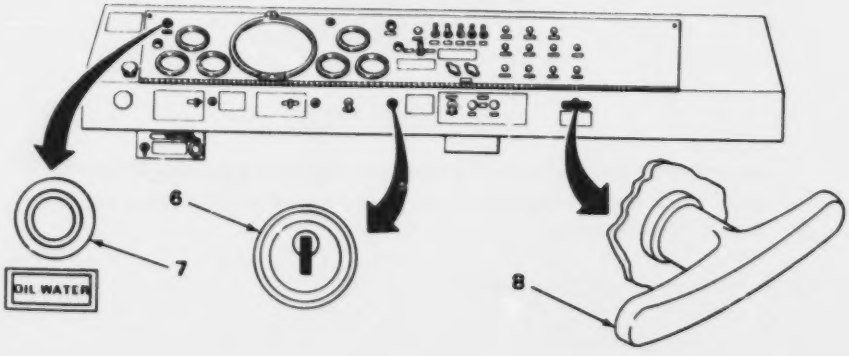
a. If engine starts, release key immediately.

b. If engine fires but does not start, and temperature is below 40°F (4°C), but above 0°F (-18°C), release key immediately and try again to start without using quick start.

CAUTION

- If engine fails to start within 30 seconds, discontinue cranking (release ignition key switch) to prevent overheating starter motor. Allow starter motor to cool for 1 to 2 minutes before cranking again. If engine fails to start in four tries, notify Organizational Maintenance.

- Do not rotate ignition switch key to start position while starter motor is still turning from previous try. This could result in serious damage to starter motor.



TA220842

STARTING AND WARM-UP AT TEMPERATURES BELOW 40°F (4°C) – CONTINUED

c. If engine does not start and air temperature is below 0°F (-18°C), repeat 7 and 8.

CAUTION

Do not operate engine with low or no oil pressure. Engine will be damaged.

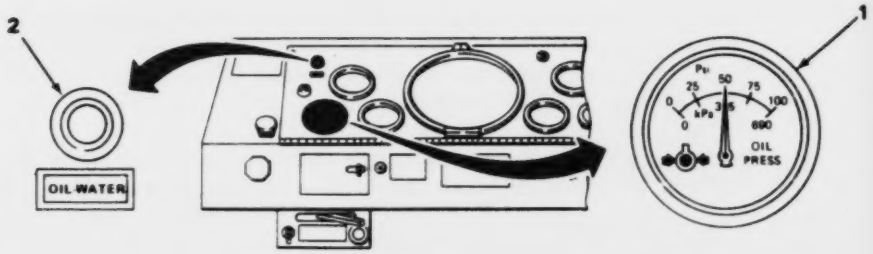
9. Check OIL PRESSure gage (1). If no oil pressure, or less than 5 psi (34 kPa) within 10 to 15 seconds, shut off engine immediately and notify Organizational Maintenance. Make sure low OIL pressure/high WATER temperature warning light (2) and buzzer are off. If light or buzzer do not go off, shut off engine and notify Organizational Maintenance.

CAUTION

Do not accelerate the engine above low idle for 2 minutes after start to allow lubricant to flow to turbocharger and other engine components.

10. Run engine at low idle (600 rpm) for 2 minutes.

11. Increase engine speed to 1000 rpm and check OIL PRESSure gage (1). Run engine no load at 1000 rpm for 5 minutes If engine is not maintaining 50 psi (345 kPa) shut engine off immediately and notify Organizational Maintenance.



CAUTION

Do not go to full throttle until engine WATER TEMPerature gage reads 140°F (60°C) to prevent damage due to not having enough engine cooling available until thermostat opens.

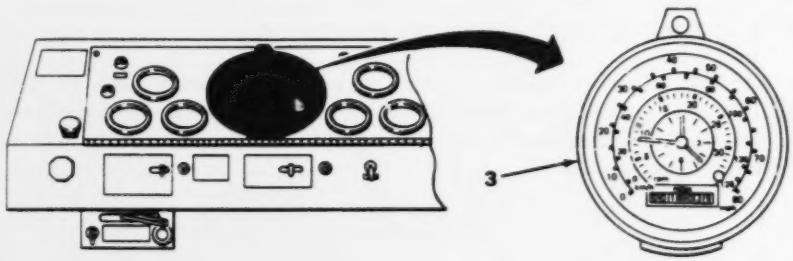
12. Engine is now ready for operation.

TA220843

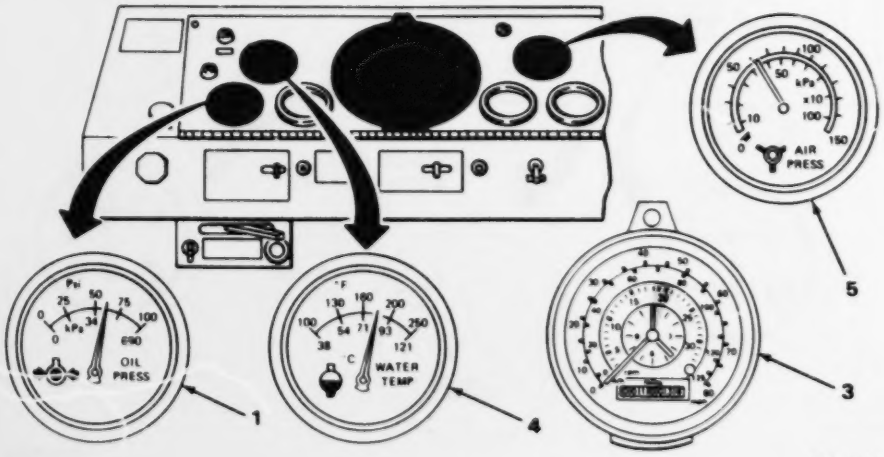
DRIVING

Basic Driving Guidelines

Avoid Unnecessary Engine Idling. During long engine idling periods, the engine coolant temperature will fall below the normal operating range. The incomplete combustion of fuel in a cold engine will cause crankcase dilution, formation of lacquer or gumming deposits on the valves, pistons, and rings, and fast collection of sludge in the engine. When long idling time is necessary, maintain at least 800 rpm as indicated on tacograph (3).



Check Gages and Indicators Often. During normal driving conditions, at engine rpm range 1800 to 2100 rpm indicated on tacograph (3), engine OIL PRESSure gage (1) should read from 30 to 70 psi (205 to 483 kPa). Engine WATER TEMPerature gage (4) should read above 140°F (60°C) at the low end and up to 200°F (93°C) at the high end. Normal water temperature is from 160° to 185°F (71° to 85°C). The AIR PRESSure gage (5) should register at least 60 psi (414 kPa). If not, the low air pressure warning light and buzzer will come on. Normal air pressure for driving is 90 to 120 psi (615 to 820 kPa).



TA220844

DRIVING – CONTINUED

The main transmission OIL TEMPerature gage (1) should register normal operating temperature range of 160° to 220°F (71° to 104°C). Check the BATTERY voltmeter (2) and the FUEL gage (3) often. Normal BATTERY voltmeter reading is 20-30 vdc. Maximum is 31 vdc.

Check the rpm readings on the tachograph (4) for the proper ranges described in different conditions below.

NOTE

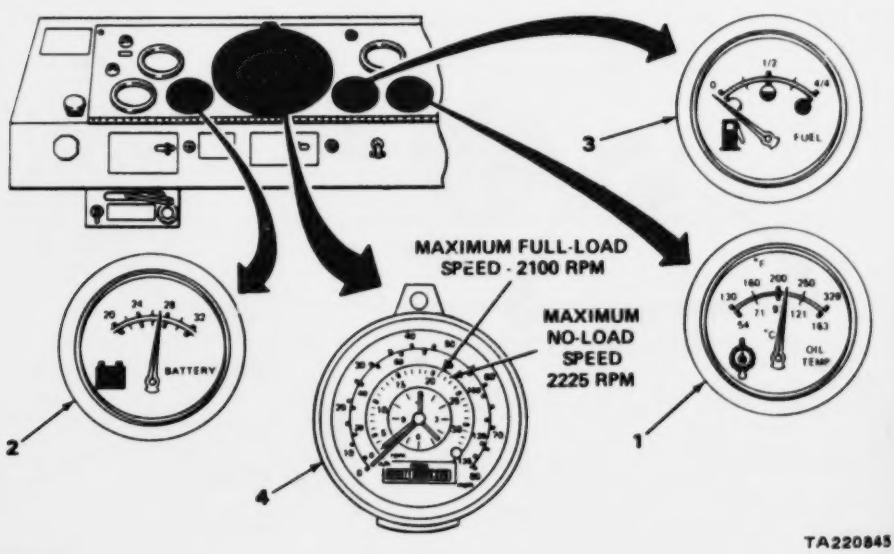
If gages or indicators show any abnormal conditions, bring truck to a safe stop, shutdown engine, and notify Organizational Maintenance.

Conserve Engine RPM. It is not necessary to operate the engine at maximum rpm to get good performance. The engine will perform efficiently at the low and middle speed ranges and offer a definite fuel advantage at reduced speeds. Conserve rpm by tailoring engine speed to load requirements and the roadspeed desired.

CAUTION

The maximum no-load governed engine speed is 2225 rpm. Never allow engine speed to exceed 2225 rpm. Under a full load, the governed speed is 2100 rpm. If the engine is allowed to exceed governed speeds, serious engine damage can result.

The operator that insists on running in low gear at top rpm when restricted to 25 or 30 mph (40 to 48 km/h) is wasting fuel and creating unnecessary noise.

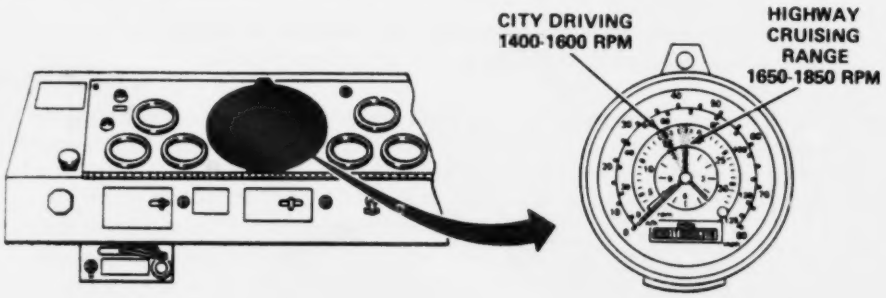


TA220845

DRIVING – CONTINUED

Highway Driving. When driving conditions permit, maintain the legal highway speed in a gear range that permits running the engine 10 to 20 percent below governed speed. This is the engine cruising range and it gives better fuel economy than higher engine speeds. Recommended highway cruising range is 1650 to 1850 rpm. You may operate in the economy range at full throttle if you are satisfied with the way the truck performs. However, operating with reserve power makes good sense on hilly roads, in high winds, and other conditions. Reserve power is gained by operating in a lower gear range.

City Driving. Operate the truck in a high gear at low engine rpm to maintain the lawful speed. By reducing engine speed you are saving fuel and lowering the noise level of the M911 Truck Tractor. When slowing down for turns and other posted speed zones, stay in your running gear and reduce engine rpm to get within the speed limit. Avoid downshifting until you are ready to return to highway speed. Recommended rpm range for city driving is 1400 to 1600 rpm.



TA220846

USING HYDRAULIC RETARDER

CAUTION

Long continuous use of the hydraulic retarder will raise transmission oil temperature and may cause damage to the transmission.

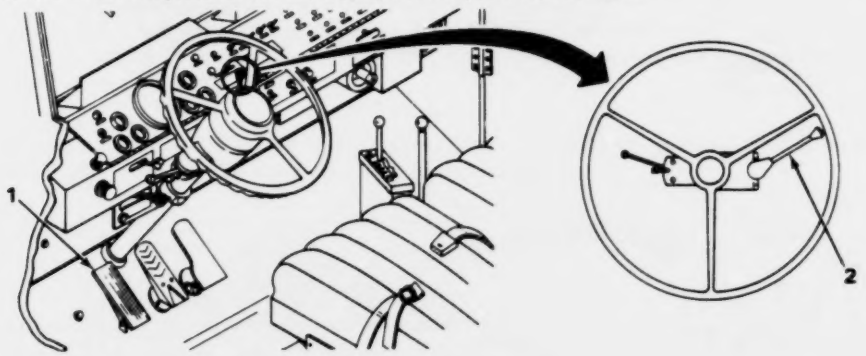
Help slow the M911 Truck Tractor on curves and downgrades by using the hydraulic retarder. Release accelerator and then depress the retarder pedal (1) located left of the service brake pedal to apply the retarder. You will get best retarding effect in the lower forward transmission gear ranges. To prevent overheating transmission oil, fully release pedal for short periods and reapply as necessary.

USING TRAILER BRAKE HAND CONTROL

CAUTION

Always return semitrailer brake control to OFF position (all the way up) after use, or semitrailer brakes will burn up.

Use the trailer brake hand control (2) to help avoid jackknifing. This control will apply the semitrailer brakes only. Pull down on the control to apply the semitrailer brakes. Be sure to return th control to the off position (all the way up) when you finish using it.



USING DRIVELINE LOCKING SYSTEM

CAUTION

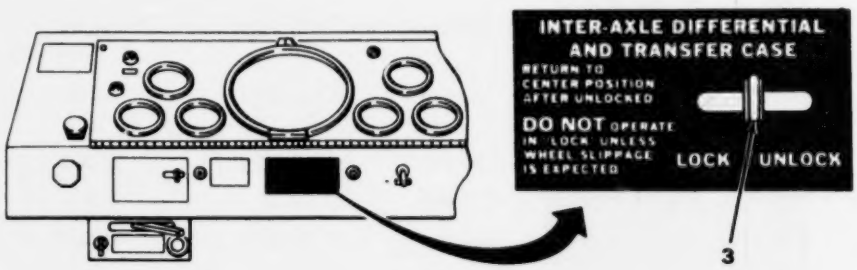
Do not move driveline locking system lever to LOCK position while M911 Truck Tractor is turning a corner or if tires are slipping. This will cause damage to transfer gears. To be certain, it is recommended that M911 Truck Tractor be stopped before locking the differentials.

Before driving into an area which has poor tractive surface, move the INTER-AXLE DIFFERENTIAL AND TRANSFER CASE LOCK/UNLOCK control (3) on the instrument panel from center position to LOCK position. Full torque will then be transmitted to the driving axles in order to give better traction. When you return to normal driving surface, move the INTER-AXLE

TA220847

USING DRIVELINE LOCKING SYSTEM – CONTINUED

DIFFERENTIAL AND TRANSFER CASE LOCK/UNLOCK control (3) to the UNLOCK position while the M911 Truck Tractor is moving. After the system has disengaged, return the control to center position.



USING PUSHER AXLE

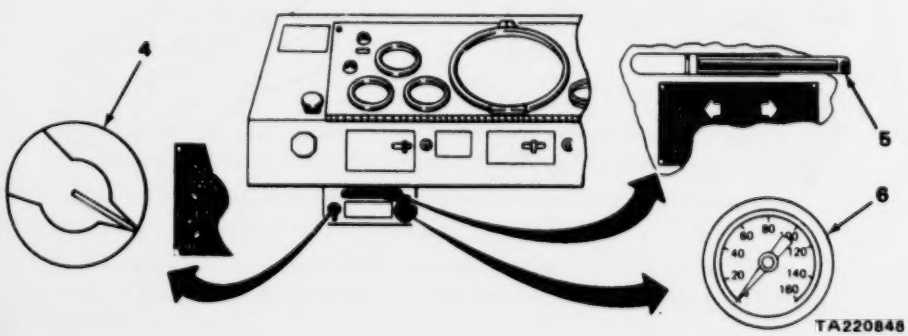
CAUTION

Do not operate M911 Truck Tractor with pusher axle lowered during off-road rough road, or without payload on highway. You could damage shock absorbers or air bags.

1. Lower pusher axle by rotating two position lift knob (4) to down position. Pusher axle will slowly come down until its tires touch the ground.

2. Apply desired pusher axle air load according to pusher axle air load chart (page 2-76) by moving pusher axle air pressure load control handle (5) to the left (toward INFLATE) and watching air pressure load gage (6). Adjust handle left or right until proper psi shown in table on page 2-76 is indicated on gage.

3. To raise pusher, move control handle (5) to DEFLATE until pressure on gage (6) goes to 0 psi (0 kPa). Rotate lift knob (4) to UP position until axle is raised.



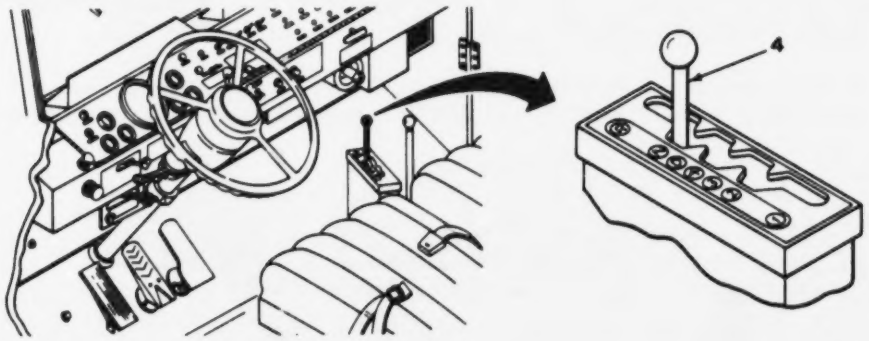
Pusher Axle Air Load

PAYLOAD	WEIGHT	PSI (kPa)	WEIGHT ON PUSHER AXLE
M60, M48 through M48A3, and AVLB w/o bridge	52½-ton	100 (682)	18,000
M60A1, M60A1 (RISE), and M48A5	56-ton	105 (720)	19,000
M60A2, M728, and M88A1	60-ton	110 (755)	20,000
M551	18-ton	0 (0)	0
2-M113A1	24-ton	40 (275)	9300
1-M113A1	12-ton	0 (0)	0

USING TRANSMISSION GEAR RANGES AND COMBINATIONS

Main Transmission. Road, load, and traffic conditions sometimes require that you move the main transmission range selector lever (1) to a position that will give a lower drive range. For example, if you shift to 4 (2-4 range) or 3 (2-3 range), you can limit the transmission to automatically shifting only within these lower ranges to meet the existing driving conditions. When the driving conditions are back to normal, return the range selector lever (1) to normal driving range position (D).

When driving up a steep grade, or pulling through mud or snow, move the main transmission range selector lever (1) to the 2 (2nd gear hold) position. In the 2 position, no automatic upshifting or downshifting will occur (unless engine overspeed occurs). For more severe loaded grade conditions, move the main transmission range selector lever (1) to the 1 (1st or low gear) position. This position will give the most pulling power, engine braking effect, and hydraulic retarder effect you can get.

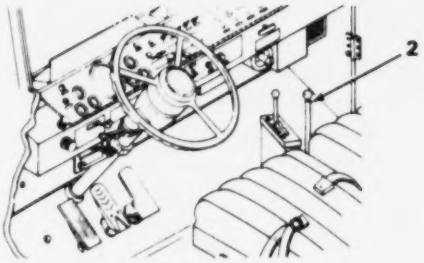


TA220849

USING TRANSMISSION GEAR RANGES AND COMBINATIONS – CONTINUED

Auxiliary Transmission. For extreme load and grade conditions and for off-highway operation, you can get additional low gear range by shifting the auxiliary transmission selector (2) to low range.

When you need low range, always use the following procedure for shifting the auxiliary transmission.



CAUTION

Never move the lock lever of the transfer case to LOCK when driving on a hard surface.

Never shift the auxiliary transmission while the M911 Truck Tractor is moving. This can cause damage to transmission and/or drive train. Whenever you move the lock lever to LOCK, you must shift the auxiliary transmission to low.

1. Stop Truck
2. Engine Speed - IDLE
3. Main Transmission selector lever – (N) neutral position.
4. Auxiliary transmission shift lever – LOW RANGE
5. Main transmission selector lever – 1 (1st gear hold) position, or other ranges as needed.

NOTE

Low range auxiliary and 1 position main transmission combination gives the most pulling power, engine braking, and hydraulic retarder effect you can get.

You get the most pulling power in each main transmission range selection when the auxiliary transmission is in low range.

You can upshift or downshift main transmission while the M911 Truck Tractor is moving (even at full throttle) whether the auxiliary transmission is in high or low range.

USING TRANSMISSION GEAR RANGES AND COMBINATIONS – CONTINUED

CAUTION

The M911 Truck Tractor must be completely stopped to shift the auxiliary transmission.

PUTTING M911 TRUCK TRACTOR IN MOTION

WARNING

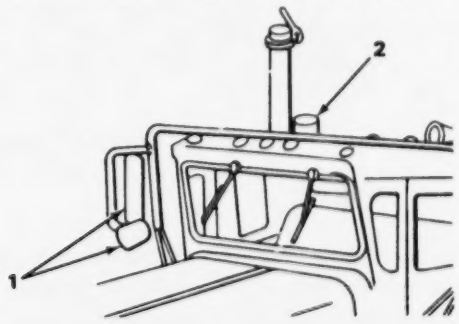
Do not move M911 Truck Tractor until low air pressure warning light and buzzer go off. About 60 psi (414 kPa) is needed to release the brakes, and 90 to 120 psi is needed for normal driving. Damage to equipment and injury to personnel could result from moving the truck with low air pressure.

Review Driving Guidelines

1. Avoid long engine idling. If long idle is necessary, keep engine speed up to at least 800 rpm.
2. Highway cruising range is 1650 to 1850 rpm.
3. City operating range is 1400 to 1600 rpm.
4. Wait for shift points when downshifting on a grade.
5. Avoid overspeeding the engine.

Control Selection

1. Adjust rear view mirrors (1). Have crew member help.



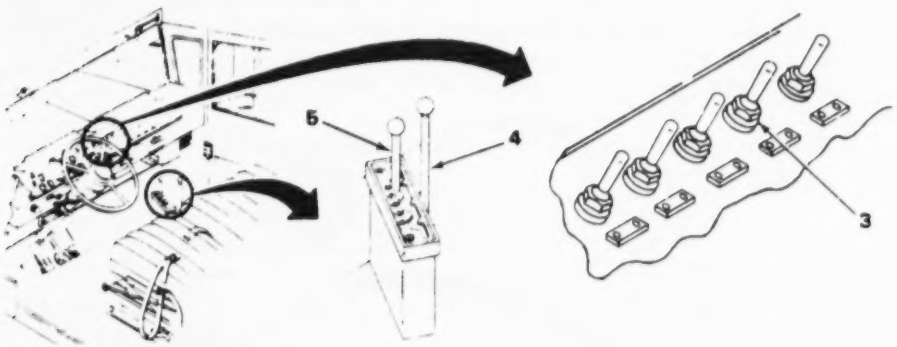
2. Turn on BEACON (warning) light (2) by pushing up switch (3), and other needed lights.
3. Engine speed – IDLE.

TA220851

PUTTING M911 TRUCK TRACTOR IN MOTION – CONTINUED

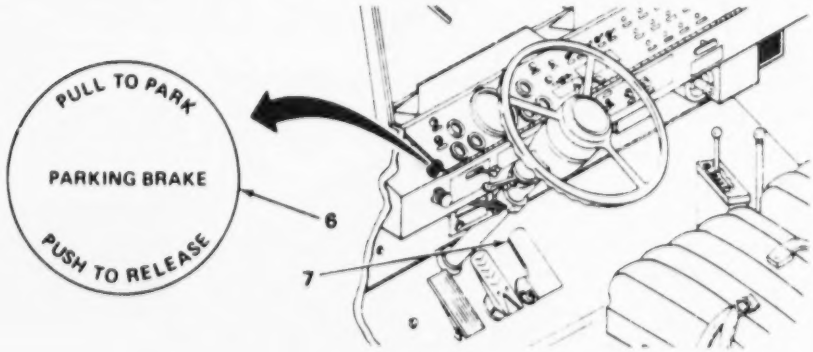
4. Auxiliary transmission shift lever (4) – high range or lower range as required.

5. Main transmission selector lever (5) – (D) position for normal driving conditions.



6. PARKING BRAKE – Release by pushing PARKING BRAKE control (6).

7. Accelerator Pedal (7) – Gradually depress to move M911 Truck Tractor forward.



CAUTION

Never let the M911 Truck Tractor coast in neutral. Severe transmission damage can result. Engine braking and hydraulic retarder action are not available during a neutral coast.

Never operate the engine for more than 30 seconds at full throttle with the transmission in gear and the output stalled. Long operation of this type will cause the torque converter oil temperature to become very high and result in damage to the torque converter and transmission.

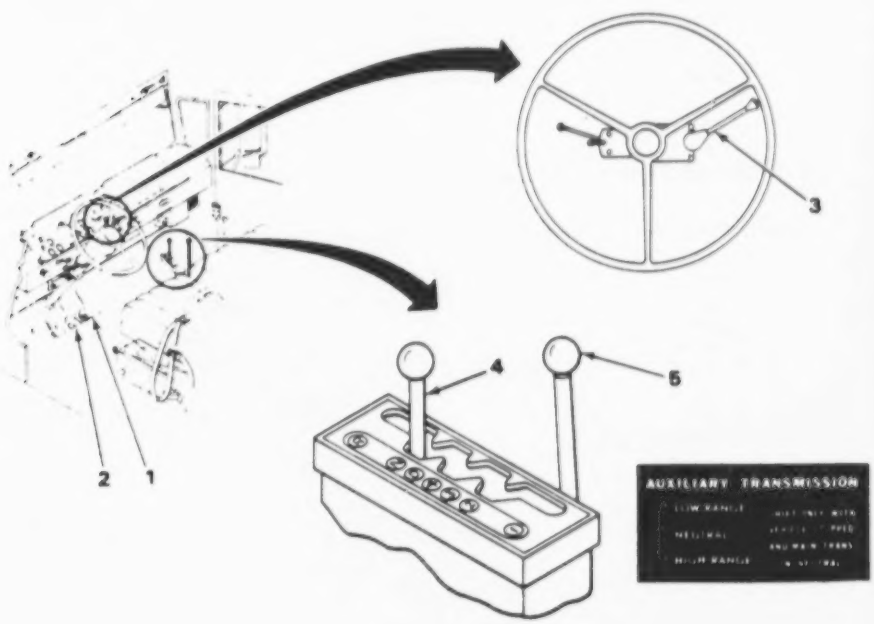
TA220852

STOPPING THE M911 TRUCK TRACTOR AND SHUTTING DOWN THE ENGINE

1. Lift foot from accelerator pedal (1) and let engine braking and main transmission downshifting help slow the M911 Truck Tractor.

2. Depress service brake pedal (2) to make a normal complete stop. If towing a payload, use semitrailer hand brake control (3) as required to slow the semitrailer and truck to help avoid jackknifing.

3. Shift main auxiliary transmission levers (4) and (5) to neutral when M911 Truck Tractor is completely stopped.



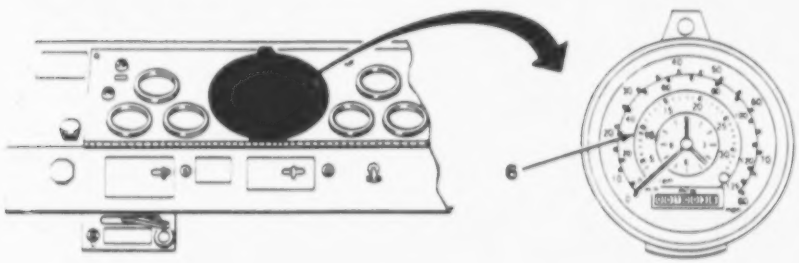
CAUTION

Allow turbocharger to slow down, and both the turbocharger and engine to cool. Run the engine at 800 to 1000 rpm at no load for 3 to 5 minutes before shutting down. Amount of cool down time needed will depend on how hard the engine was worked. Failure to cool may cause damage to engine and/or turbocharger.

TA220853

STOPPING THE M911 TRUCK TRACTOR AND SHUTTING DOWN THE ENGINE - CONTINUED

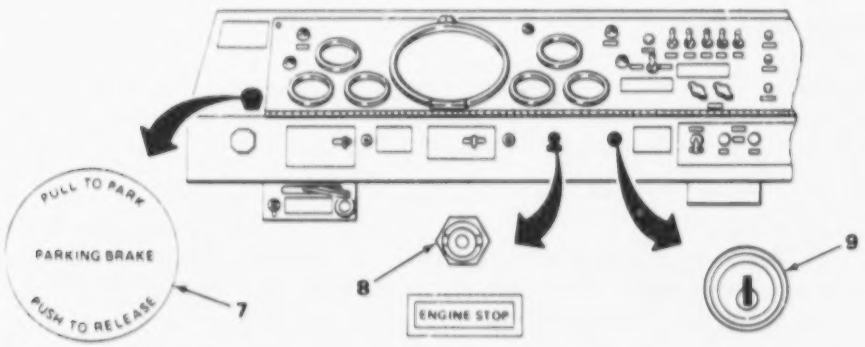
4. Run engine 800 to 1000 rpm (6) at no load for 3 to 5 minutes to reduce turbocharger speed and allow engine and turbocharger to cool. Cool-down time will depend on how hard the engine was worked.



5. Apply PARKING BRAKE control (7) before shutting down the engine.

6. Lower engine speed to normal idle and hold ENGINE STOP switch (8) in UP position until engine stops. This engages a solenoid on the engine which shuts off fuel supply to cylinders.

7. Turn off key switch (9) by turning key switch to vertical position.



TA220854

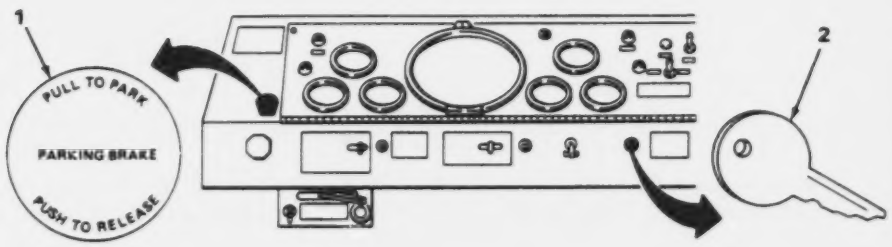
PARKING

WARNING

Do not park the M911 Truck Tractor on a steep grade. If a parked M911 Truck Tractor breaks away, it could cause injury to personnel and damage to equipment.

If the truck tractor must be parked on a grade, the wheels must be chocked and if on a paved road, the wheels must be turned toward curb if facing down hill and away from the curb if facing uphill.

1. Stop M911 Truck Tractor.
2. Apply PARKING BRAKE (1).
3. Remove ignition key (2).
4. Lock cab doors.



FIFTH WHEEL

The M911 Truck Tractor has a heavy-duty, full oscillating (4 way tilt) fifth wheel (3) that will accept and lock a 3½ inch (8.9 cm) diameter kingpin. It also has a manual secondary lock release, and side-to-side oscillation lockouts (4).

NOTE

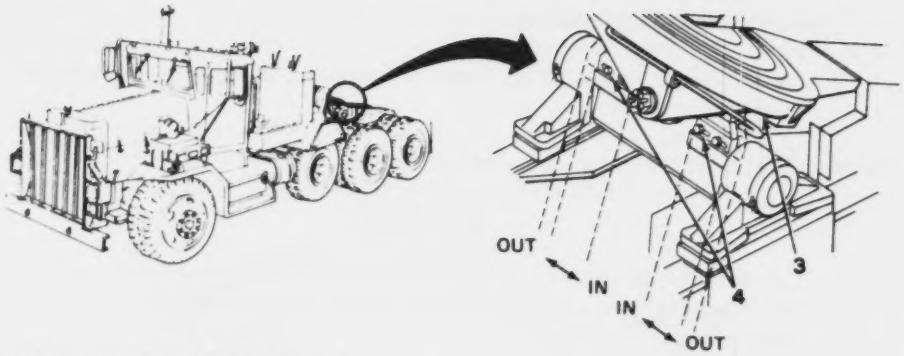
Be sure side-to-side oscillation lockouts (4) are positioned to give the type of oscillation needed for your mission – 4 way for off-road, and front and rear oscillation for highway driving.

For full oscillation (4 way tilt), oscillator lockouts (4) should be positioned fully outward on both sides.

For front and rear oscillation only, oscillator lockouts (4) should be positioned fully inward on both sides.

TA220855

FIFTH WHEEL – CONTINUED



COUPLING AND UNCOUPLING

Preparing for coupling (before backing under semitrailer)

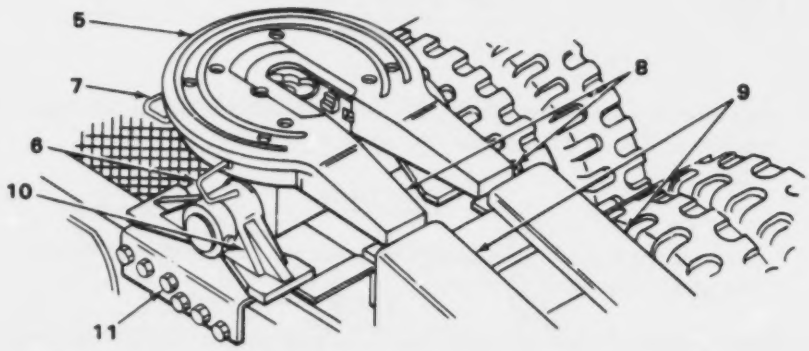
1. Lubricate top of fifth wheel (5) (see LO 9-2320-270-12)

2. Pull fifth wheel lock secondary lock handle (6) all the way out and hook in the out posiiton.

3. Fifth wheel lock primary lock handle (7) can be in either OUT or IN position to latch.

4. Check fifth wheel ramps (8) level with, or below angle of pickup ramps (9). If ramps (8) are not level with or below angle of approach ramps (9), remove obstructions and position fifth wheel ramps (8) properly.

5. Check fifth wheel to frame mountings (10) condition and mounting bolts (11) tight. If mounting (10) is not in good condition or bolts (11) are not tight, notify Organizational Maintenance.



TA220856

COUPLING AND UNCOUPLING - CONTINUED

6. Prepare semitrailer for coupling.

7. Check semitrailer kingpin height. Adjust, if not correct, so that fifth wheel picks up semitrailer on fifth wheel ramps.

Backing M911 Truck Tractor Toward Semitrailer

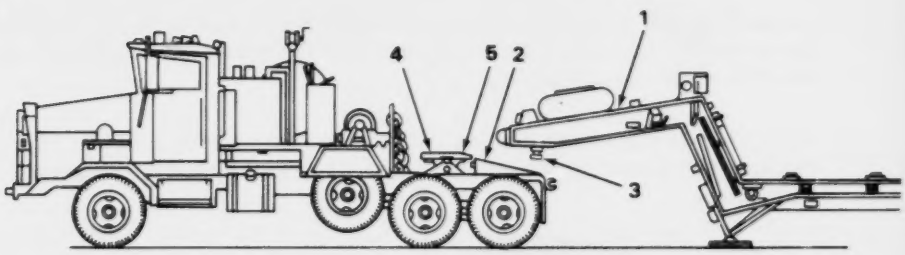
WARNING

Do not permit anyone to stand directly between the M911 Truck Tractor and semitrailer during the coupling procedure. Failure to follow this warning can result in injury to personnel.

1. Aline M911 Truck Tractor straight in front of semitrailer.

2. Direct crew member to stand at left rear of M911 Truck Tractor (never directly behind) to give coupling instructions.

3. Slowly back M911 Truck Tractor under semitrailer gooseneck (1) so that it slides up approach ramps (2) with semitrailer kingpin (3) centered as closely as possible in throat of fifth wheel (4).



4. Make sure you have picked up semitrailer with fifth wheel ramps (5). If kingpin (3) comes in too high, it will not enter fifth wheel (4) correctly.

CAUTION

Be careful not to run kingpin up fifth wheel ramps. This can damage kingpin, fifth wheel, or payload.

5. When you have correctly picked up semitrailer, stop backing. Stopping after pick-up and before locking helps prevent hitting too hard.

6. Continue backing until fifth wheel (4) locks firmly to kingpin (3).

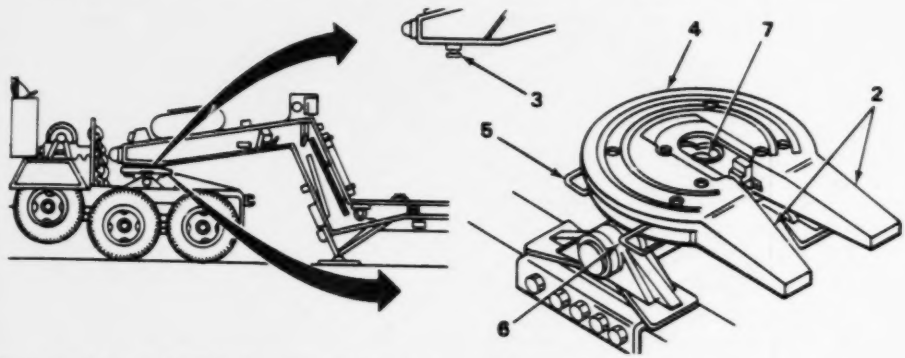
TA220857

COUPLING AND UNCOUPLING – CONTINUED

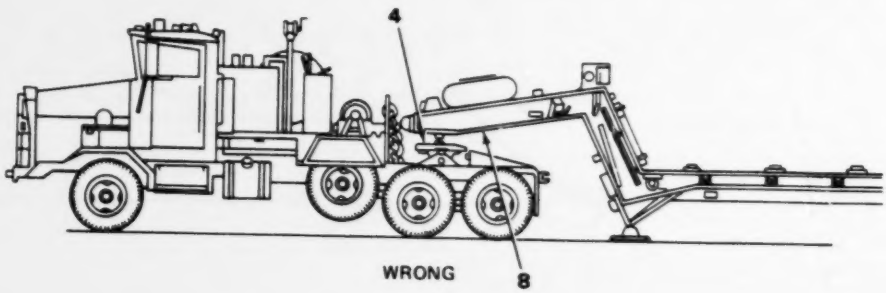
7. Test coupling by moving M911 Truck Tractor slightly forward. This will put pressure against kingpin (3). If not a good coupling, pull out and hook primary and secondary lock handles (5) and (6), and repeat steps 1 through 7.

8. Visually check the coupling.

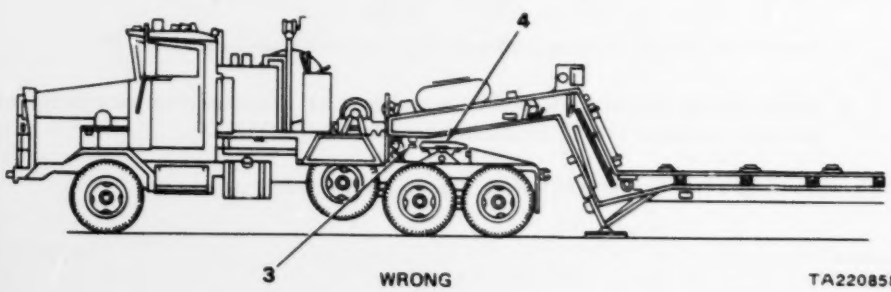
Semitrailer Kingpin (3) must be in locks (7) in center of fifth wheel (4).



There must be no daylight between fifth wheel plate (8) and fifth wheel (4).



Kingpin (3) must not be hooked over front of fifth wheel (4).



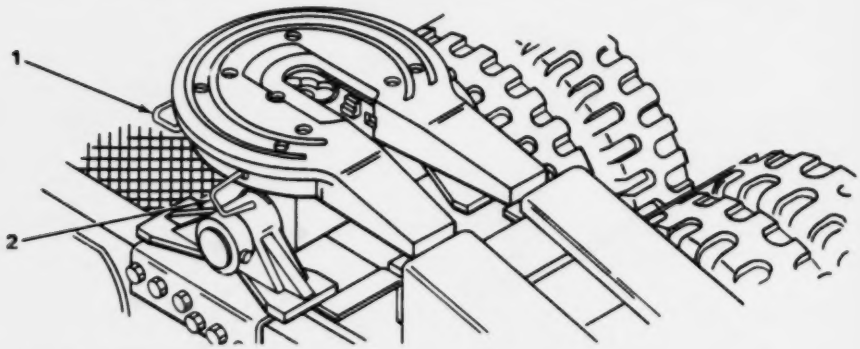
TA220858

COUPLING AND UNCOUPLING – CONTINUED

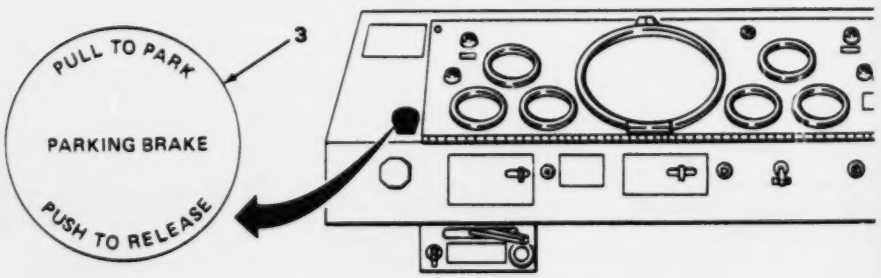
CAUTION

Primary and secondary lock handles must be pulled out and locked after each false hook-up to be sure there is a recouple without damage to equipment.

9. If semitrailer was not correctly picked up, pull both primary and secondary lock handles (1) and (2) out and hook them, and repeat steps 1 through 8.



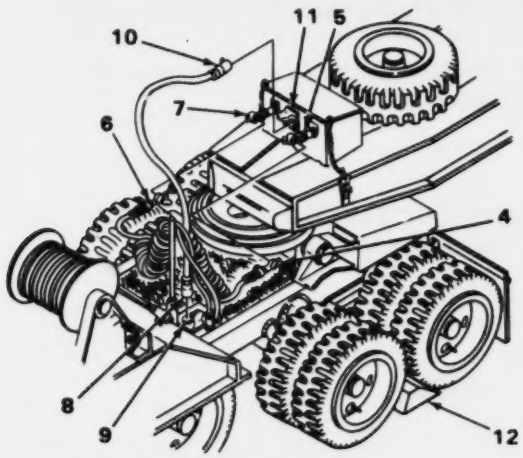
10. Apply PARKING BRAKE (3).



11. Connect tractor-to-trailer air and electricity as follows:
    a. Connect red emergency air hose coupling (4) to semitrailer emergency gladhand (5).
    b. Connect blue service air hose gladhand (6) to semitrailer service gladhand (7).
    c. Connect tractor-to-trailer electrical cable connector (8) to tractor electrical connector (9) and cable connector (10) to semitrailer connector socket (11).
12. Place chocks (12) behind M911 Truck Tractor and semitrailer wheels.

TA220859

COUPLING AND UNCOUPLING – CONTINUED

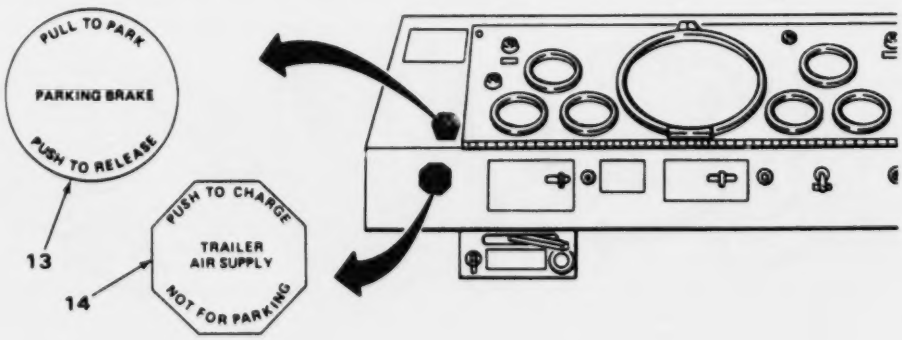


13. Push in PARKING BRAKE control (13) to release parking brake and to allow M911 Truck Tractor air to enter trailer air system.

14. Push in TRAILER AIR SUPPLY control (14) to charge semitrailer air reservoirs.

15. Raise and secure semitrailer landing gear.

16. Apply PARKING BRAKE (13) and remove chocks (12).



TA220860

COUPLING AND UNCOUPLING – CONTINUED

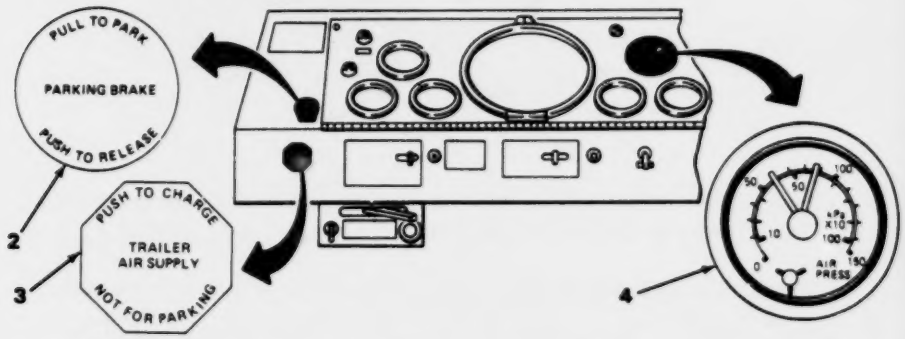
17. Do semitrailer PMCS, giving special attention to tires, brakes, and lights.

18. Be sure AIR PRESSure gage (1) shows at least 80 psi (552 kPa) before putting M911 Truck Tractor in motion.

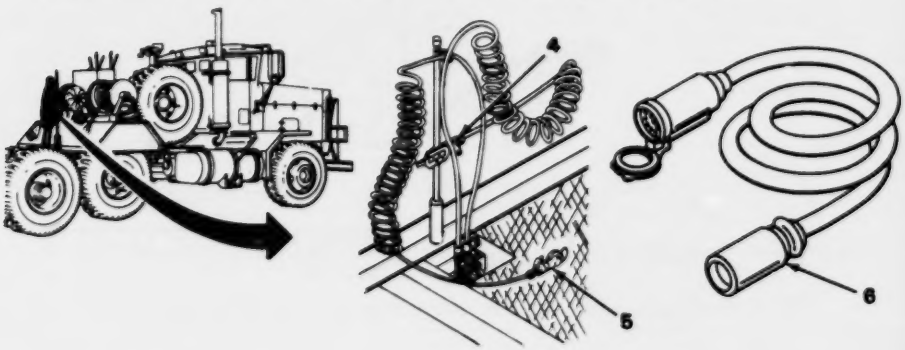
Uncoupling

1. Apply PARKING BRAKE (2). This will keep the M911 Truck Tractor from running out from under semitrailer when uncoupled.

2. Pull TRAILER AIR SUPPLY control (3) to OUT position.



3. Disconnect tractor-to-trailer air hose gladhands (4) and (5) from semitrailer and electrical cable (6) from M911 Truck Tractor and semitrailer. Secure air hoses (4) and (5) to center of harness holder, and stow electrical cable (6) in stowage compartment.



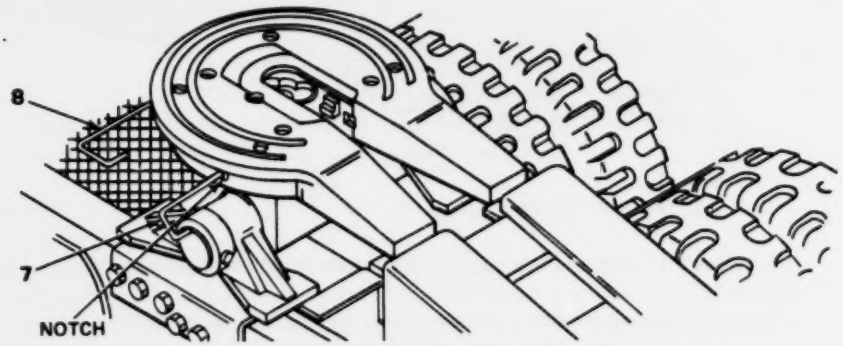
4. Lower semitrailer landing gear.

TA220861

COUPLING AND UNCOUPLING – CONTINUED

5. Pull fifth wheel secondary lock handle (7) all the way out and raise it to let handle notch hook on fifth wheel casting. This will unlock and hold secondary lock.

6. Pull fifth wheel primary lock handle (8) and raise it to let handle notch hook on fifth wheel casting. This will unlock and hold primary lock.

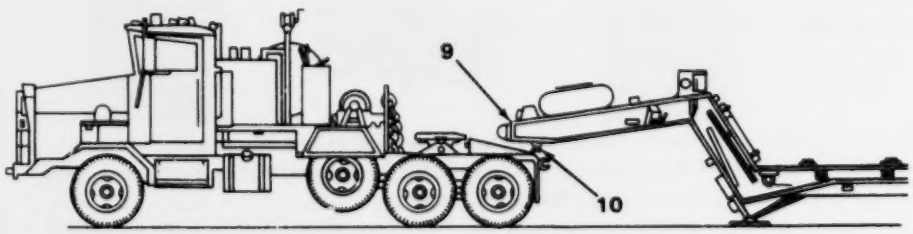


7. Direct crew member to watch to make sure semitrailer kingpin clears properly during uncoupling.

CAUTION

Make sure kingpin clears rear frame cross member when M911 Truck Tractor is moved forward.

8. Release parking brake and move M911 Truck Tractor slowly forward; allowing semitrailer gooseneck (9) and kingpin (10) to slide down fifth wheel and ramps until semitrailer landing gear touches ground.

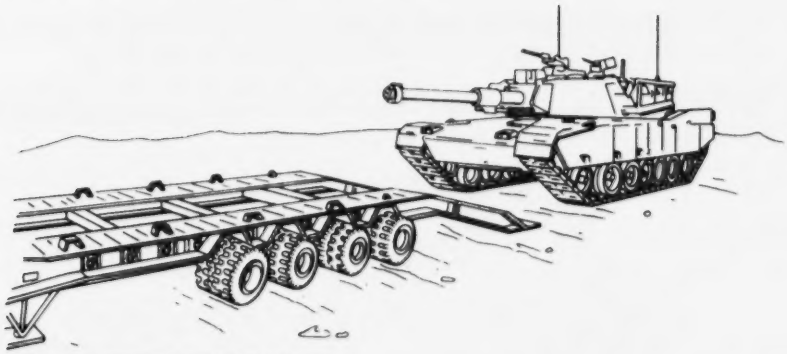


LOADING AND UNLOADING

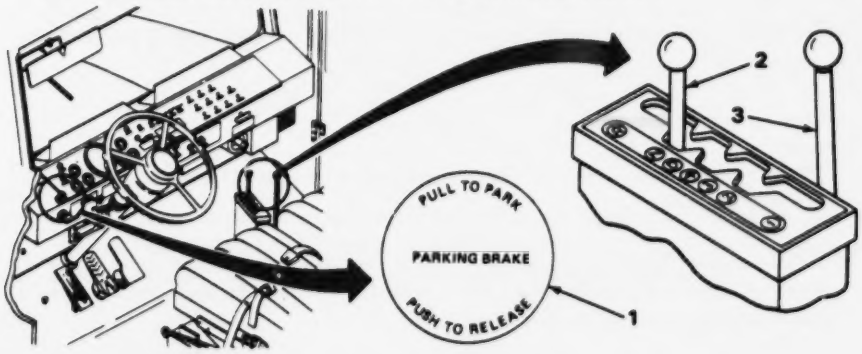
Preparing M911 Truck Tractor for Loading and Unloading

1. Aline M911 Truck Tractor and semitrailer as close as possible to the payload vehicle if loading.

LOADING AND UNLOADING – CONTINUED



2. Apply PARKING BRAKE (1).
3. Move main transmission range selector levers (2) to neutral (N) position.
4. Move auxiliary transmission shifter lever (3) to neutral position.



Preparing semitrailer for loading or unloading.

NOTE

Driver and crew members may be using the winches to winch disabled vehicles onto and off of the semitrailer. Some vehicles are capable of operating, and being loaded or unloaded under their own power.

TA220863

OPERATING WINCHES

WARNING

All personnel not involved in winching operations will stand clear of winch cables and payload. A snapped cable or shifting payload can cause serious injury or death. If payload shifts and presents a hazard, or if any component fails, stop winching operation immediately and notify Organizational Maintenance.

NOTE

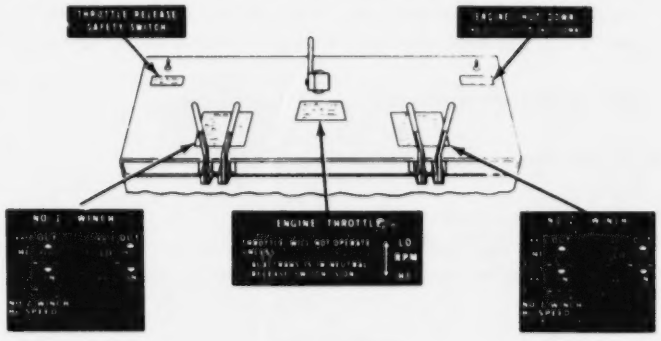
Operate winches at high speed only under no load conditions. Use high speed for paying out or taking up cable that is not under a load.

Winch Equipment

The M911 Truck Tractor is equipped with two hydraulically powered worm gear winches mounted on a platform behind the cab. Each winch is equipped with an automatic safety brake which will stop and hold a payload when movement ceases.

Winch Controls and Data/Instruction Plates

The winch operator's station is located between the rear of the cab and the number 2 winch. The tation consists of a platform, control panel, controls, and data/instruction plates.



WARNING

Use proper ear protection at cab and winch operator's station during winching. Noise level may cause, permanent ear damage and loss of hearing (see TB-MED-251).

OPERATING WINCHES – CONTINUED

WARNING

Always wear heavy gloves when you handle winch cables. Never allow cable to run through your hands. Broken and frayed wires can cause painful hand injury.

Never operate either winch with less than four turns of cable on the drum. Added pull on attachment bolt could cause cable to break loose and cause injury to personnel.

When taking up winch cables onto drums, be sure the coils of cable are tight and close together. Surging and shaping cables could cause uneven stress and loading that could break a cable and cause injury to personnel.

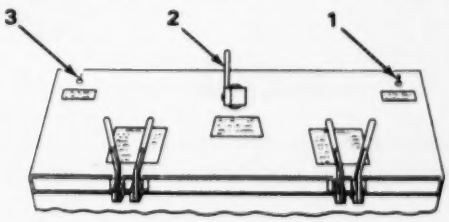
Winch Operator Engine Shutdown

Engine shutdown switch (1) on winch operators control panel will shut down the engine when pushed all the way forward (away from operator) until the engine stops. Use the following steps to shut down the engine.

CAUTION

Allow turbocharger to slow down, and both the turbocharger and engine to cool. Run the engine at 800 to 1000 rpm at no load for 3 to 5 minutes before shutting down. Amount of cool down time needed will depend on how hard the engine was worked. Failure to cool may cause damage to engine and/or turbocharger.

1. Move engine throttle (2) full forward (away from operator).
2. Hold engine shutdown switch (1) forward until engine stops.
3. Release engine shutdown switch (1).
4. Turn throttle release safety switch (3) off before leaving operating station.



Basic Guidelines for Operating Winches

Both winches can be operated at the same time when full load in low speed.

Both winches can be run in same direction or in opposite directions at same time in low speed.

TA220865

OPERATING WINCHES – CONTINUED

Cable pay out or take-up can be reversed quickly by moving control handle to opposite direction.

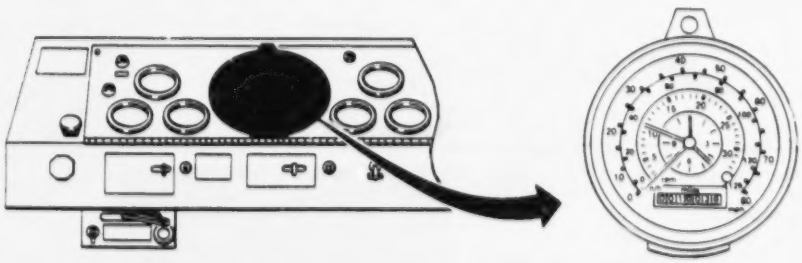
Only one winch can be operated at a time in high speed. High speed operation involves diverting hydraulic power from one winch to combine diverted power with other winch. This doubles the operating speed of the winch that is in operation at high speed. If all four control levers are moved forward at the same time only low speed payout or takeup will result.

Operating Winches in Temperature Below -25°F (-32°C)

CAUTION

Do not attempt to operate the winches in temperatures below -25°F (-32°C) until cold weather servicing has been performed on both winches by Organizational Maintenance. Failure to have cold weather servicing performed may result in damage to winch parts.

1. Check to be sure winches have had cold weather servicing.
2. Ready winches for operation (see page 2-94).
3. Engage PTO and run M911 Truck Tractor at fast idle (1000 rpm) for approximately 30 minutes to warm up hydraulic systems.



4. Pay out and take up about 100 feet of cable at low speed from both winches to operate no load.

CAUTION

Avoid winching operations that cause sudden shock loads; Metals become brittle at extremely cold temperatures, and sudden shock loads may cause equipment damage.

5. Winches are now ready for cold weather operation.

TA220866

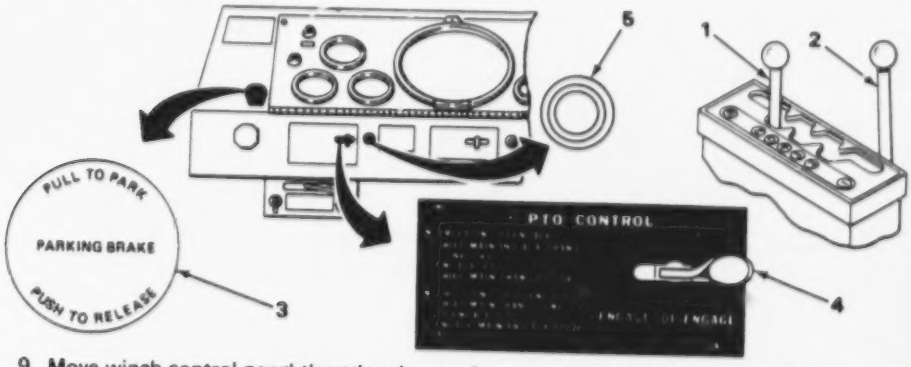
OPERATING WINCHES – CONTINUED

Readying Winches for Operation

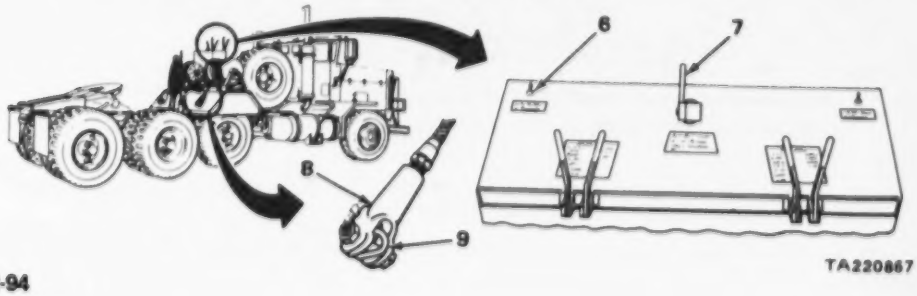
NOTE

See TM 9-2330-294-14 for instructions on preparing semitrailer for winching operations.

1. Position M911 Truck Tractor and semitrailer.
2. Place main transmission range selector (1) in neutral (N) position.
3. Place auxiliary transmission shift lever (2) in neutral position.
4. Apply parking brake by pulling out PARKING BRAKE control (3).
5. Direct crew member to disconnect winch cable clevises (8) from anchors (9).
6. Move PTO control (4) to ENGAGE position.
7. Place main transmission range selector lever (1) in D position.
8. Check that PTO/AUX throttle indicator light (5) is on.



9. Move winch control panel throttle release safety switch (6) to ON position. Engine throttle (7) is now operational at winch control panel.



TA220867

OPERATING WINCHES – CONTINUED

Operating NO. 1 WINCH

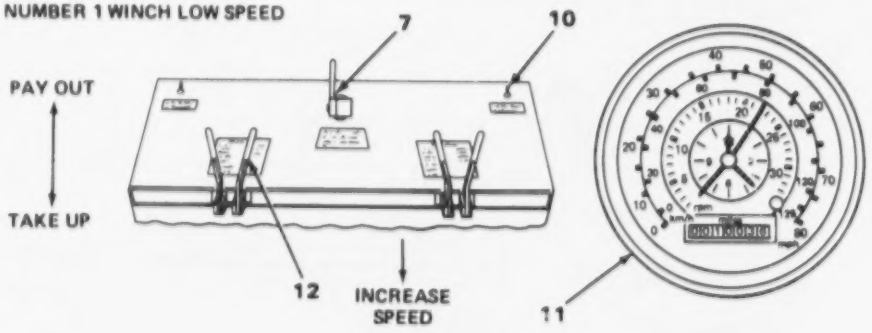
NOTE

Engine may be shut down to stop winching operation if necessary by using engine shutdown control (10). See page 2-92.

1. Pull engine throttle control (7) as far back as it will go (toward cab). Main transmission will shift through its 2 to 5 range.

2. Check instrument panel tachograph (11) after final upshift. Engine speed should stabilize at about 2200 rpm.

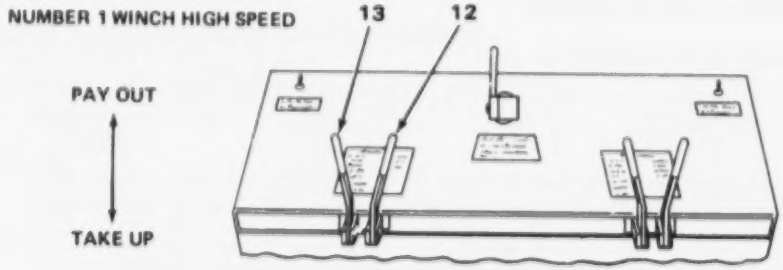
3. Move NO. 1 WINCH low speed lever (12) forward to pay out cable and backward to take up cable at low speed.



CAUTION

Never operate a winch at high speed when there is a load on the winch cable. High speed is intended for no-load operation only. Failure to follow this caution can result in equipment damage.

4. For high speed operation, move high speed lever (13) and low speed lever (12) at the same time and in the same direction. Move both levers forward to pay out cable and backward to take up cable at high speed.



TA220868

OPERATING WINCHES – CONTINUED

Operating NO. 2 WINCH

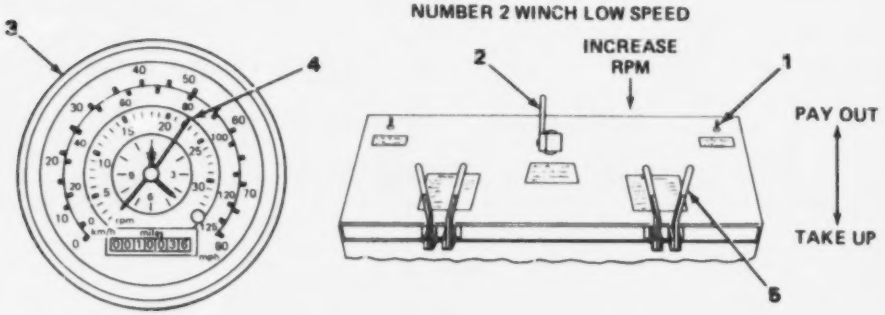
NOTE

Engine may be shut down to stop winching operation if necessary by using engine shutdown control (1). See page 2-92.

1. Pull engine throttle control (2) as far back as it will go (toward cab). Main transmission will shift through its 2 to 5 range.

2. Check instrument panel tachograph (3) after final up-shift. Engine speed should stabilize at about 2200 rpm (4).

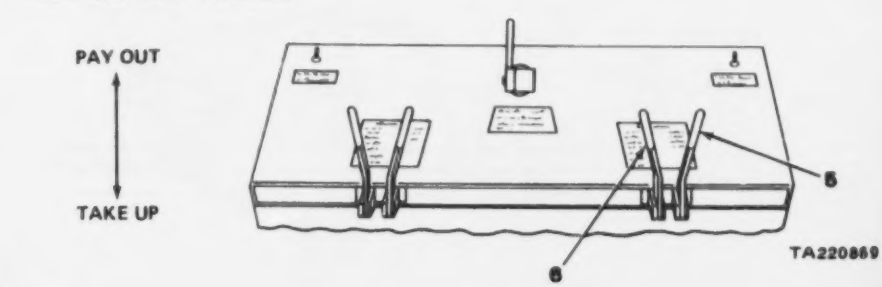
3. Move NO. 2 WINCH low speed lever (5) forward to pay out cable, and backward to take up cable at low speed.



CAUTION

Never operate a winch at high speed when there is a load on the winch cable. High speed is intended for no-load operation only. Failure to follow this caution can result in equipment damage.

4. For high speed operation, move high speed lever (6) and low speed lever (5) at the same time and in the same direction. Move both levers forward to pay out cable and backward to take up cable at high speed.



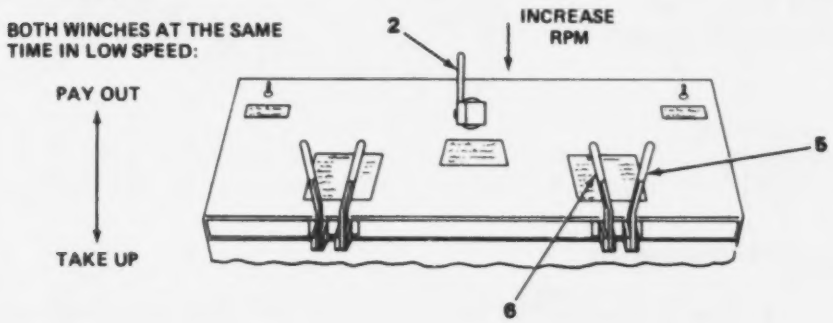
OPERATING WINCHES – CONTINUED

Operating Both Winches at the Same Time (low speed only)

1. Pull engine throttle control (2) as far back as it will go (toward cab).
2. Move NO. 1 WINCH low speed lever (6) and NO. 2 WINCH low speed lever (5) at the same time. Move both levers forward to pay out cable and backward to take up cable.

NOTE

The winches will operate in opposite directions at the same time in low speed only.



Paying Out Winch Cable

WARNING

Always wear heavy gloves when handling winch cables. Never let a cable run through your hands. Broken and frayed cable wires can cause painful hand injuries.

1. Direct crew member to walk out with cable, pull it tight to take up slack, and signal when there is enough cable out to reach payload.
2. Operate winch and pay out cable, watching for crew members signal.

Securing Winch Cable After Winching Operation

1. Direct crew member to disconnect winch cable from payload and keep cable taut while you take it up.
2. Take up cable while crew member watches drum to make sure cable winds evenly on drum without tangles, kinks, or twists. Cable coils should be tight and close together on drum.

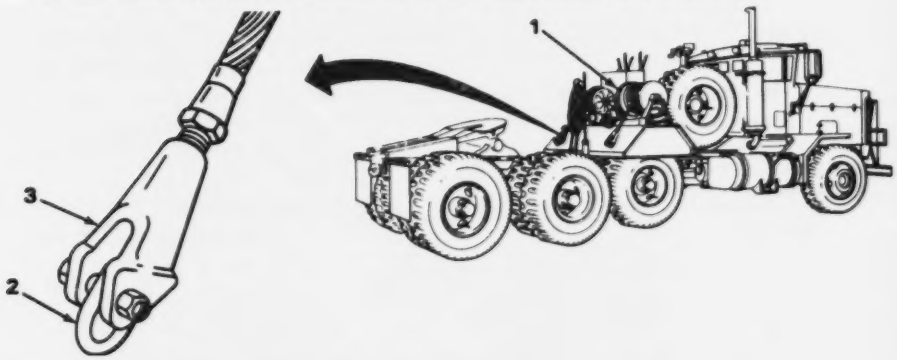
TA220870

OPERATING WINCHES – CONTINUED

Securing Winch Cable After Winching Operation – Continued

3. Direct crew member to signal when enough slack has been taken up to prevent cable from unwinding over the drum flanges (1) when attached to anchor (2).

4. Stop winch and direct crew member to bolt cable clevis (3) to anchor (2).



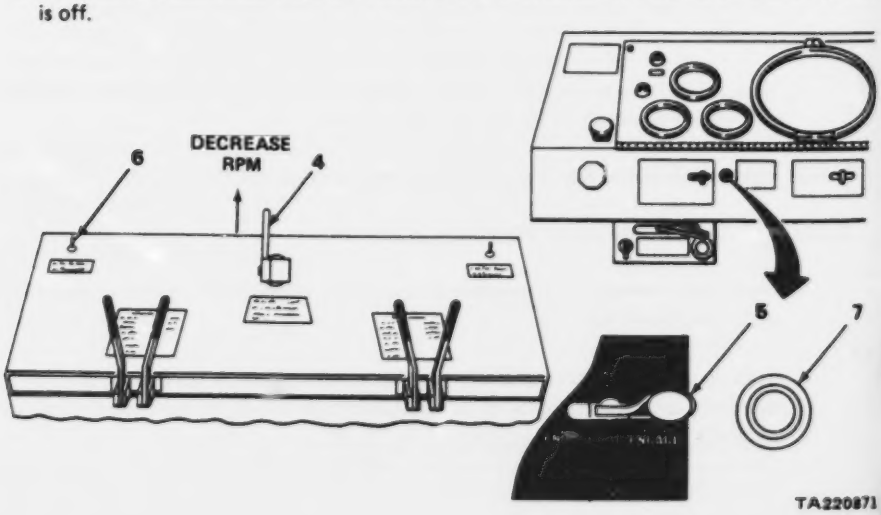
Normal Winch Shutdown

1. Push engine throttle control (4) fully forward (away from cab) to reduce engine rpm.

2. Have M911 Truck Tractor operator move PTO control (5) to DISENGAGE position.

3. Move throttle release safety switch (6) to OFF position.

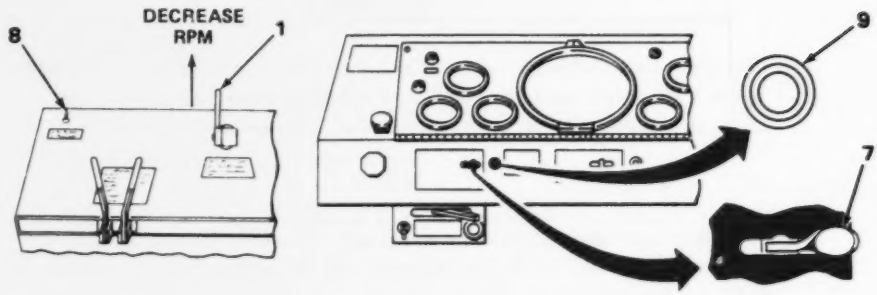
4. Have M911 Truck Tractor operator verify that PTO/AUXiliary throttle indicator light (7) is off.



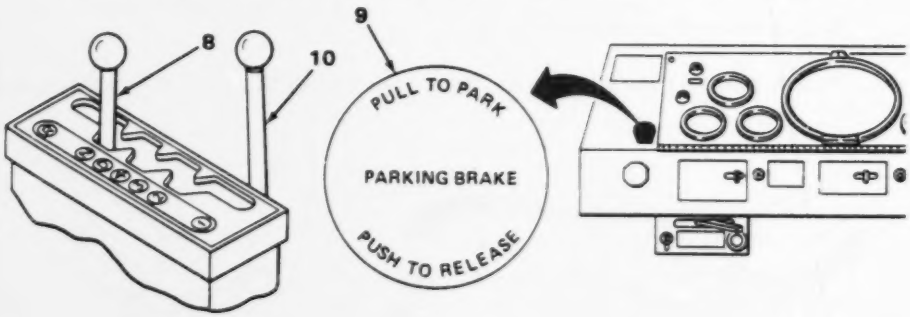
TA220871

OPERATING WINCHES – CONTINUED

Normal Winch Shutdown – Continued



5. Move main transmission range selector lever (8) to neutral (N) position. PARKING BRAKE (9) still applied, and auxiliary transmission selector lever (10) still in neutral.



6. Winches are now shutdown. Continue your mission.

TA220872

OPERATION OF AUXILIARY EQUIPMENT

Decontamination Apparatus

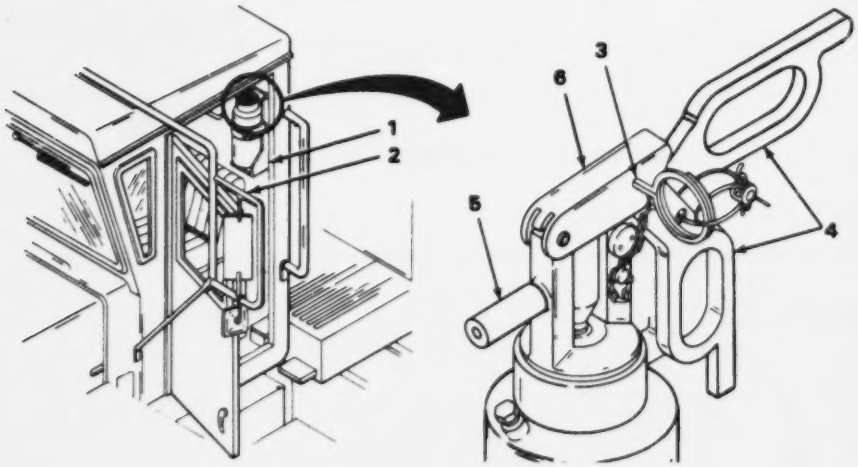
WARNING

The M911 decontamination apparatus looks like a fire extinguisher. The DS2 agent in the apparatus is flammable, and if used on a fire by mistake could cause serious injury to personnel and damage to equipment.

NOTE

The decontamination apparatus is not expected to spray the whole truck. It is for emergency use on operator controls such as steering wheel, gear shift lever, pedals, and dash board.

1. Take out of storage bracket (1) on cab wall behind operator's seat (2).
2. Pull ring pin (3) out of handle (4).
3. Lift handle (4) slowly until it locks.
4. Aim nozzle (5) and press top (6). Spray range is about 3 to 8 feet (1 to 2.5 meters).



TA220873

OPERATION OF AUXILIARY EQUIPMENT – CONTINUED

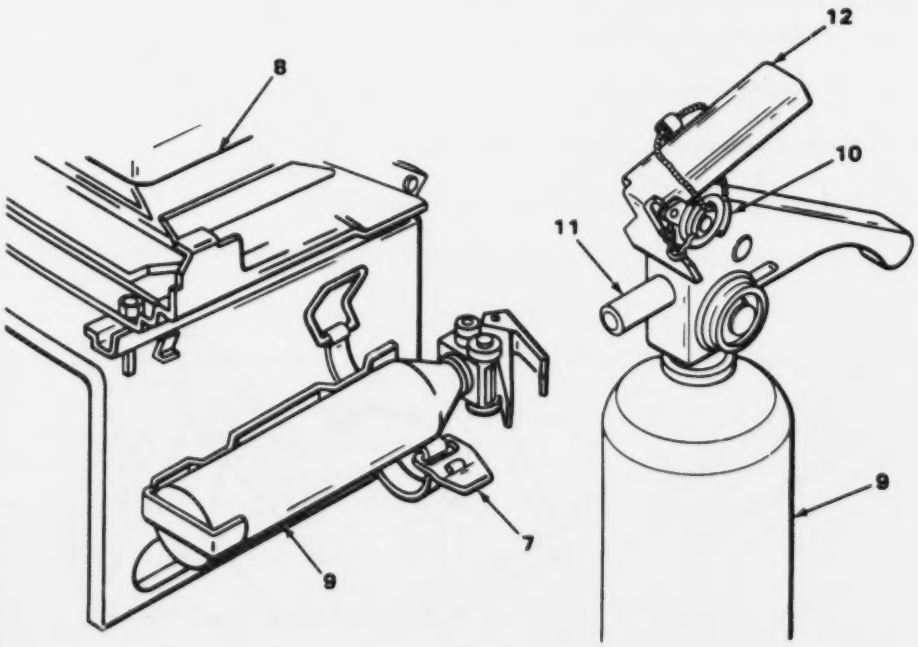
Portable Fire Extinguisher

1. Open bracket (7) at left side of operator's seat base (8) and remove fire extinguisher (9).
2. Hold extinguisher (9) upright and pull safety pin (10).
3. Point nozzle (11) toward base of fire.
4. Press top lever (12) to discharge chemical at base of fire. Use a side to side motion.

WARNING

A used fire extinguisher may not give enough fire protection to stop a fire from causing severe injury to personnel and a damage to equipment.

5. After using fire extinguisher (9), notify Organizational Maintenance that you need a replacement.



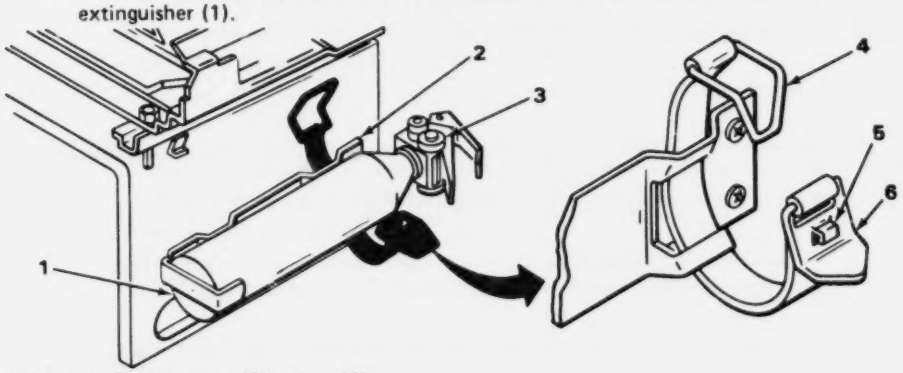
TA220874

OPERATION OF AUXILIARY EQUIPMENT – CONTINUED

Portable Fire Extinguisher – Continued

6. Place fire extinguisher (1) in bracket (2) with pressure gage (3) facing up.

7. Put bracket strap loop (4) over tab (5) and pull srtap handle (6) down over extinguisher (1).



Highway Emergency Warning Kit

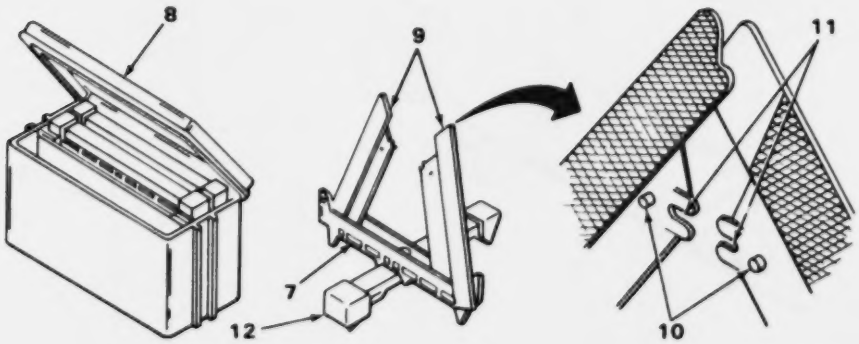
The M911 Truck Tractor warning kit has three collapsible, red reflector triangles and a plastic case to store them in. Use the warning kit when you must stop and park the M911 Truck Tractor in areas where there is other traffic.

1. Turn on emergency flashers.

2. Remove three triangles (7) from stowage case (8).

3. Raise triangle arms (9) and snap pins (10) into slots (11).

4. Rotate triangle base (12) cross-wise (1/4 turn) to its stop.

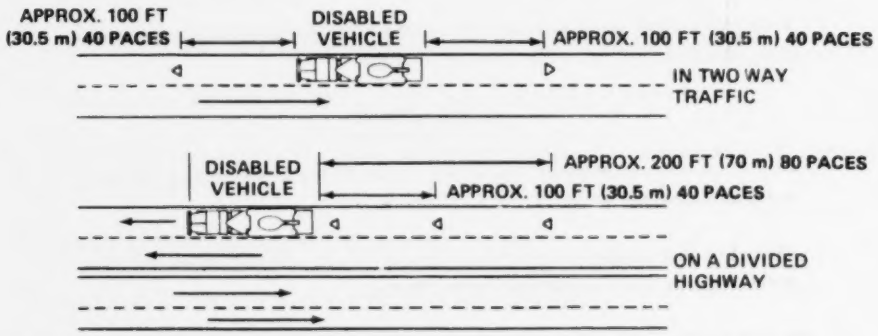


TA220875

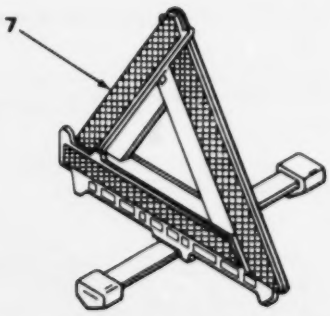
OPERATION OF AUXILIARY EQUIPMENT – CONTINUED

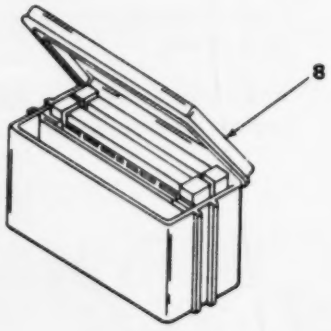
Highway Emergency Warning Kit – Continued

5. Place triangles facing traffic.



6. Fold and secure triangles (7) in case (8) when no longer needed, stow the warning kit.





Using Jumper Cables for Jump Starting

CAUTION

Do not attempt to charge or jump start a frozen battery. Equipment damage may result.

1. Turn off all electrical accessories.
2. Clean battery terminals at hook-up points.
3. Use a 24 volt dc power source.
4. Turn power source vehicle engine off.

OPERATION OF AUXILIARY EQUIPMENT – CONTINUED

Using Jumper Cables for Jump Starting – Continued

WARNING

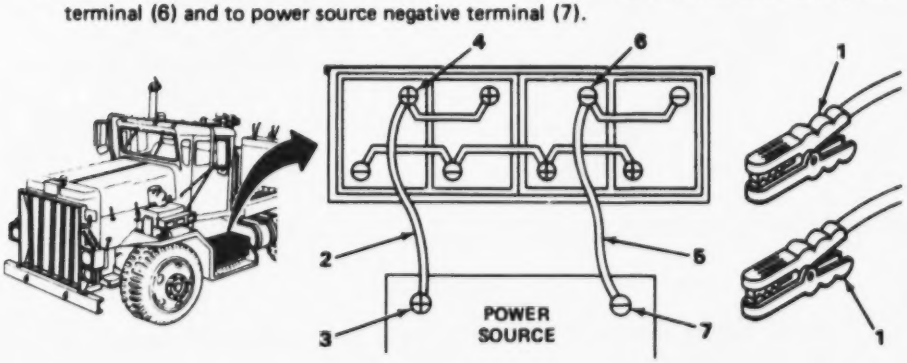
Incorrect jumper cable hook-up will cause arcing and possible battery explosion, personnel injury, and equipment damage.

CAUTION

Do not let vehicles or cables touch each other during jump starting. Equipment damage may result.

Always connect negative cable to power source last and disconnect first to prevent sparks and possible equipment damage.

5. Remove jumper cables (1) from M911 Truck Tractor stowage.
6. Attach red jumper cable (2) to power source, positive terminal (3) and to M911 Truck Tractor forward battery positive terminal (4). The M911 Truck Tractor is wired series parallel.
7. Attach black jumper cable (5) to M911 Truck Tractor third battery from front negative terminal (6) and to power source negative terminal (7).



8. Start engine on vehicle with dead battery (power source vehicle engine off).
9. Disconnect jumper cables from both vehicles (negative cable first) when engine starts.
10. Stow cables.

TA220877

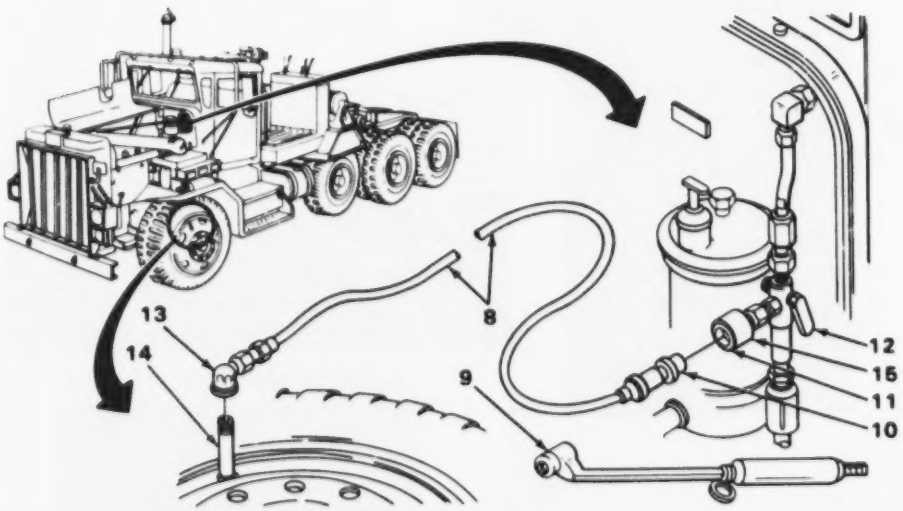
OPERATION OF AUXILIARY EQUIPMENT -- CONTINUED

Using Tire Inflation Hose

NOTE

Vehicle engine may have to be started to provide enough air pressure.

1. Remove inflation hose (8) and tire air pressure gage (9) from stowage.
2. Push hose coupling (10) into quick-disconnect coupling (11) on firewall next to power steering fluid reservoir.
3. Rotate air valve supply lever (12) upward to open.
4. Hold hose fitting (13) on tire valve stem (14) to add air.
5. Check tire air pressure with gage (9) (See pages 1-26 and 1-27 for correct air pressure). Increase or decrease air pressure to get desired gage (9) reading.
6. Rotate air valve supply lever (12) downward to shut off air supply.
7. Disconnect hose coupling (10) by pushing in on sleeve (15) on hose quick-disconnect coupling (11).
8. Stow hose (8) and gage (9).



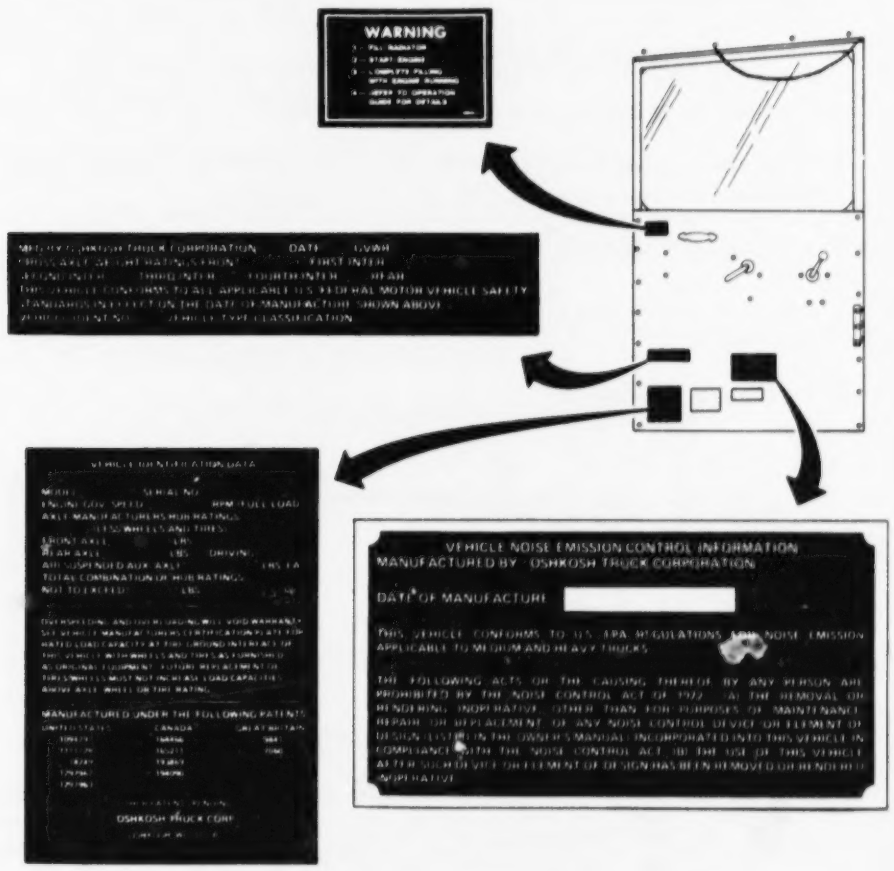
TA220878

DECALS, DATA PLATES, AND INSTRUCTION PLATES

The following illustrations show the location of decals, data plates, and instruction plates on the M911 Truck Tractor. These views are intended to point out to you where each decal or plate is located. For specific, detailed operating instructions, refer to the operating procedures for the applicable control or indicator.

Decal and Data Plates (Inside Left Door)

DECAL AND DATA PLATES (INSIDE LEFT DOOR)

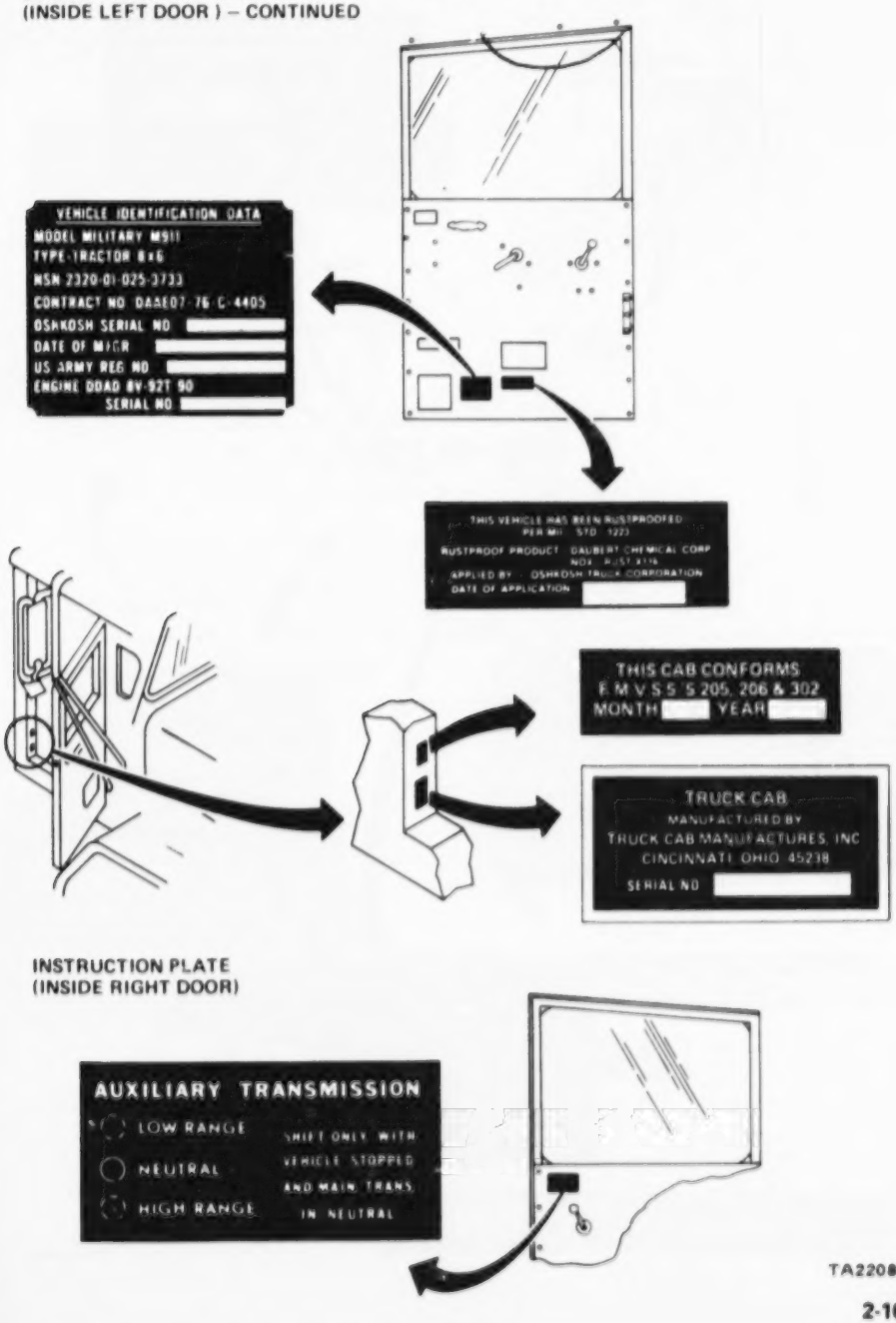

WARNING
VEHICLE NOISE EMISSION CONTROL INFORMATION
MANUFACTURED BY OSHKOSH TRUCK CORPORATION
DATE OF MANUFACTURE
THIS VEHICLE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO MEDIUM AND HEAVY TRUCKS
OSHKOSH TRUCK CORP

TA220879

DECALS, DATA PLATES, AND INSTRUCTION PLATES – CONTINUED

Decal and Data Plates (Inside Left Door) – Continued

DECAL AND DATA PLATES
(INSIDE LEFT DOOR) – CONTINUED

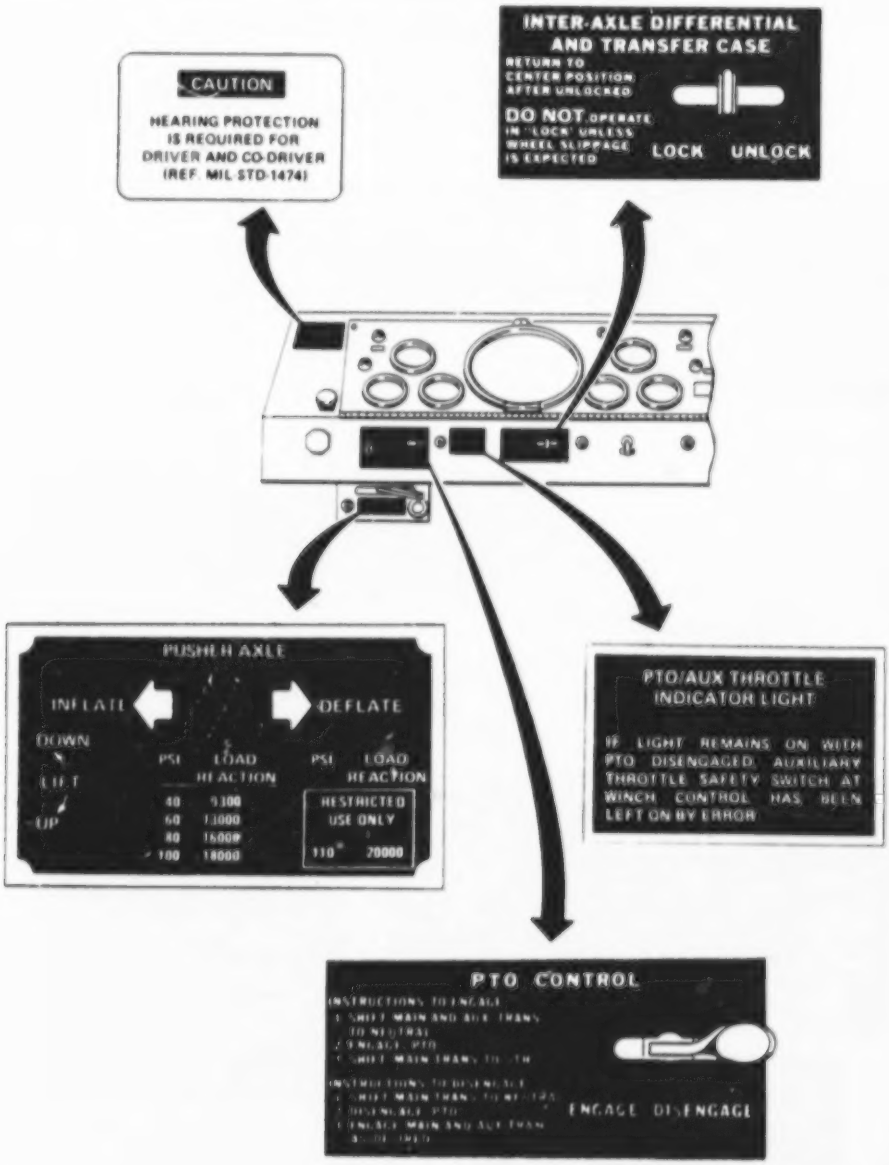


INSTRUCTION PLATE
(INSIDE RIGHT DOOR)

TA220880

DECALS, DATA PLATES, AND INSTRUCTION PLATES – CONTINUED

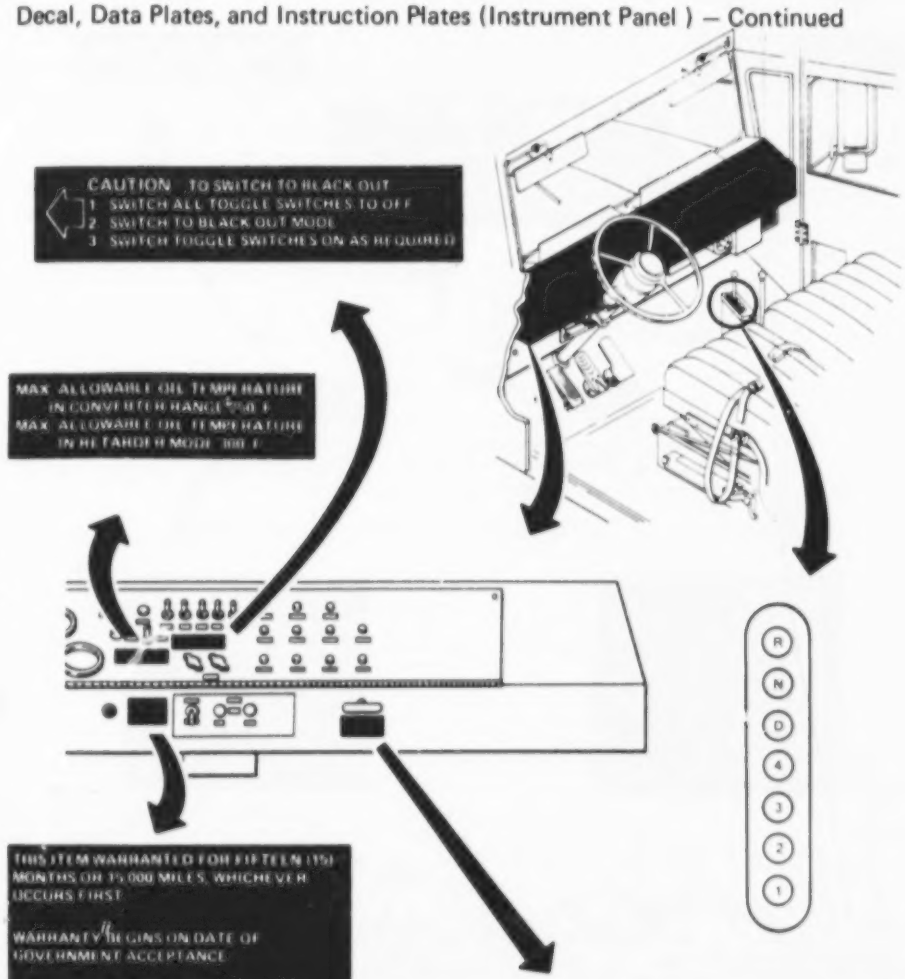
Decal, Data Plates, and Instruction Plates (Instrument Panel)



TA220881

DECALS, DATA PLATES, AND INSTRUCTION PLATES – CONTINUED

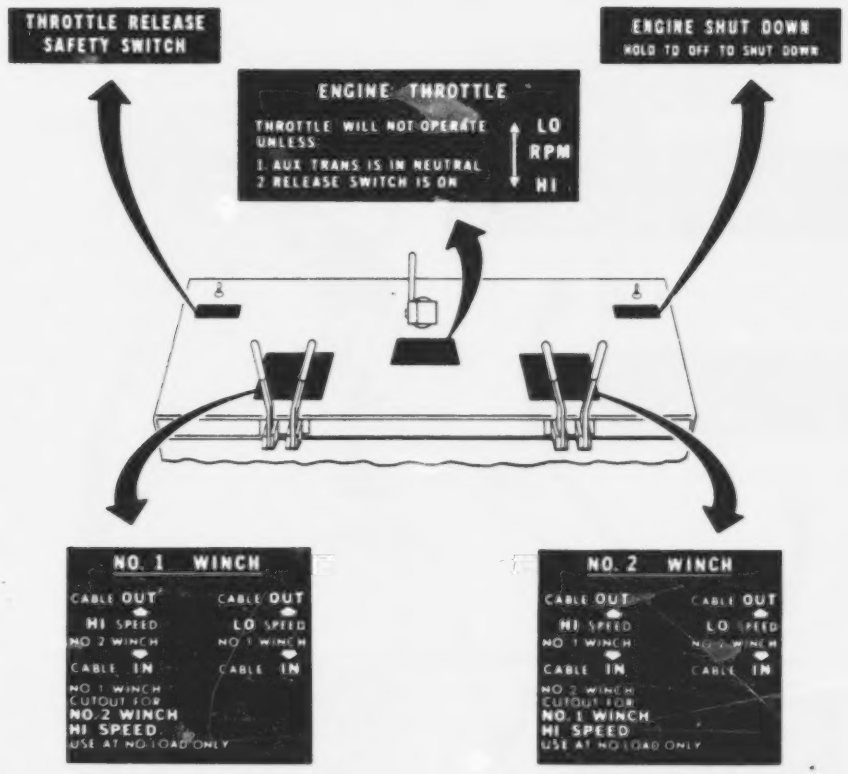
Decal, Data Plates, and Instruction Plates (Instrument Panel) – Continued


CAUTION TO SWITCH TO BLACK OUT
1 SWITCH ALL TOGGLE SWITCHES TO OFF
2 SWITCH TO BLACK OUT MODE
3 SWITCH TOGGLE SWITCHES ON AS REQUIRED
MAX ALLOWABLE OIL TEMPERATURE IN CONVERTER RANGE 250 F
MAX ALLOWABLE OIL TEMPERATURE IN RETARDER MODE 300 F
THIS ITEM WARRANTED FOR FIFTEEN (15) MONTHS OR 15,000 MILES, WHICHEVER OCCURS FIRST
WARRANTY BEGINS ON DATE OF GOVERNMENT ACCEPTANCE
CONTRACT NUMBER DAAE07 76 C 4405
REPORT FAILURES TO:
OSHKOSH TRUCK CORP., OSHKOSH WI 54901
R
N
D
4
3
2
1
KBi – DIESEL START INSTRUCTIONS
CAUTION Use only for starting. Inject only while cranking.
IMPORTANT Read instructions & cylinder label before using.
1. Start cranking engine.
2. Activate system.
3. Release (injecting starting fluid).
If engine fails to start repeat steps 2 and 3.
KRUBUR INC 900 PINGREE ROAD ALGONQUIN, IL 60102

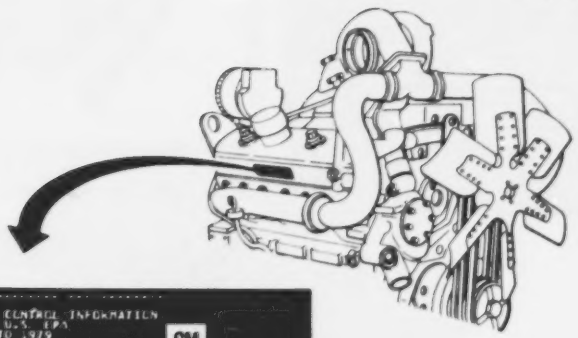
TA220882

DECALS, DATA PLATES, AND INSTRUCTION PLATES – CONTINUED

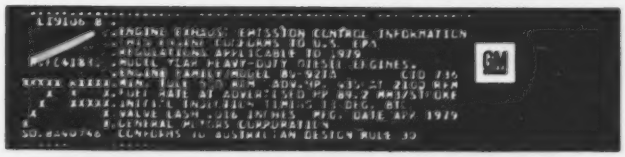
Data and Instruction Plate



TA205133



TYPICAL DATA PLATE



TA220885

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

GENERAL

This section contains many of the unusual conditions you may have to deal with while operating the M911 Truck Tractor. Become familiar with this section and with referenced publications. FM 55-30 has information on driver selection and training for wheeled vehicles, and FM 21-305 gives basic instruction for operators of wheeled vehicles. Use the material in FM 55-30, FM 21-305, and the guidelines in this section to help you operate the M911 Truck Tractor under unusual conditions.

	Page		Page
Being Towed	2-123	Manually Releasing and Resetting Spring Brakes	2-122
Extreme Cold Weather	2-112	Towing	2-128
Extreme Hot Weather	2-111	Unusual Terrain	2-114
Fording	2-120		

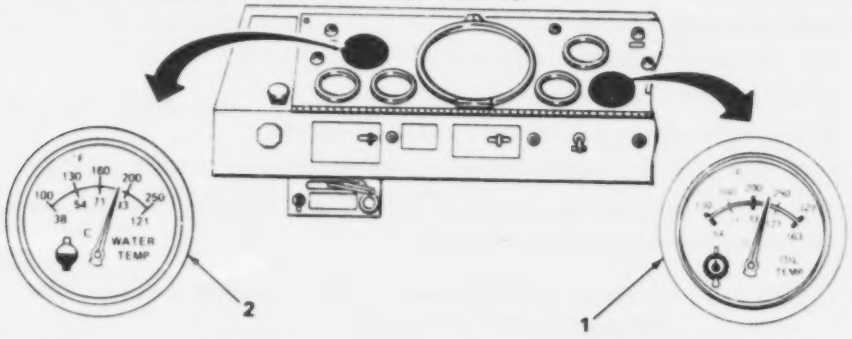
EXTREME HOT WEATHER

Watch and guard the M911 Truck Tractor against the following causes of overheating

Continuous high speed
Long hard pulls
Continuous use of high gears in steep grade and soft terrain.

Hot Weather Operation

1. Check transmission OIL TEMPerature gage (1) and WATER TEMPerature gage (2) for signs of overheating. Upper limit of normal oil temperature is 220°F (104°C) and upper limit of normal water temperature is 185°F (85°C).



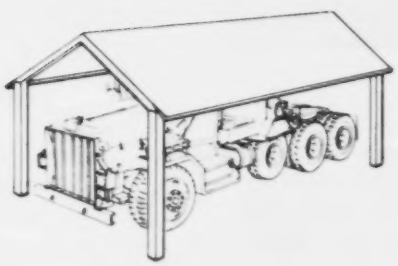
2. Check cooling system, air cleaner, engine oil level, and radiator fins frequently, and service as is necessary. Notify organizational maintenance of unusual gage readings and other problems.

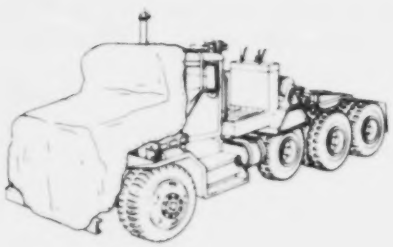
TA220884

EXTREME HOT WEATHER – CONTINUED

Parking in Extreme Heat

1. Park under cover if possible to protect against effects of sun, sand, and dust.
2. If shelter is not available, and tarpaulins are, cover at least engine components, radiator and window glass.





3. Check tire inflation and adjust to 95 psi (655 kPa) front and pusher axles, and 85 psi (586 kPa) tandem axles.
4. Check for rust and fungus growth often. Clean and lubricate to prevent rust and fungus in humid climate.

EXTREME COLD WEATHER

Effects of Extreme Cold Weather Need to be Remembered

Lubricants thicken.

Batteries lose power or freeze.

Electrical insulation can crack and cause short circuits.

Metals and other materials become hard and brittle.

Cooling system requires extra protection from extreme cold.

Fuels, lubricants, and antifreeze solutions require special storage, handling, and use.

Read and become familiar with material in the following references. They cover information needed for extreme cold weather operation.

FM 9-207	Operation and Maintenance of Ordnance Material in Extreme Cold Weather 0° to 65°F (-15° to -54°C)
FM 31-70	Basic Cold Weather Manual
FM 31-71	Northern Operations
TM 750-254	Cooling Systems – Tactical Vehicles

TA220885

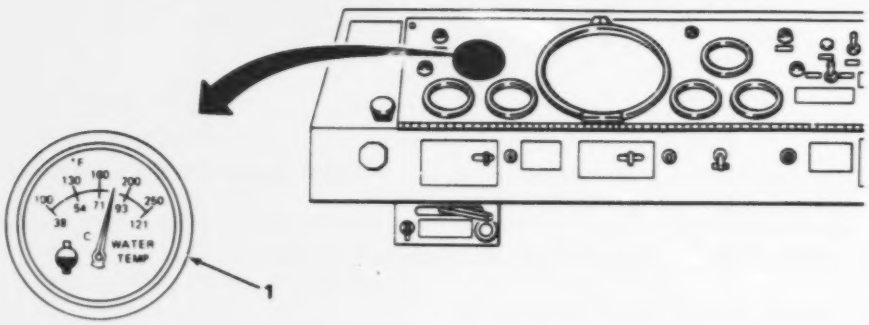
EXTREME COLD WEATHER – CONTINUED

Extreme Cold Weather Operation

1. Be sure the M911 Truck Tractor is properly prepared and protected for the weather it will operate in.

2. Use cold weather starting procedure.

3. Give engine enough time to reach an operating temperature of over 100°F (38°C) before driving, as indicated on WATER TEMPerature gage (1).



4. Put main transmission selector lever in low gear, (1) position.

5. Start moving very slowly. Tires may be frozen to the ground, or have frozen flat spots. One or more brake shoes may be frozen and need to be preheated. If preheating is necessary, notify organizational maintenance.

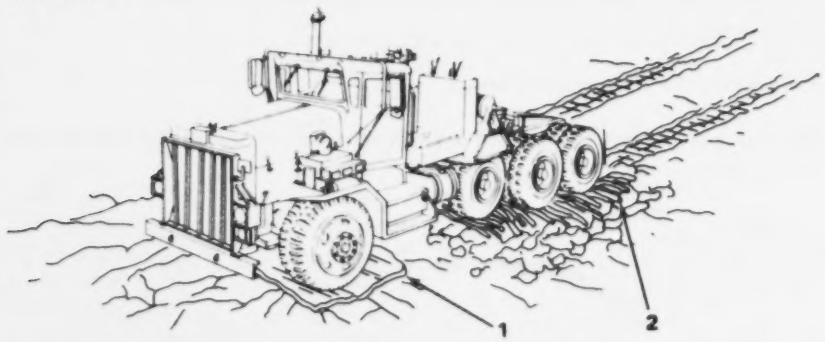
6. Continue slowly for about 100 yards (91 meters) to check for any problems that may have been caused by cold weather. Fluids and components will have a chance to lubricate and warm up before going to normal driving. Do not let engine stall.

Parking in Extreme Cold

1. Park in a sheltered area out of the wind for short shutdown periods. If no shelter is available, park facing away from the wind.

EXTREME COLD WEATHER – CONTINUED

2. For long shutdown periods, try to park on high ground, and use planks (1) or brush (2) under tires to make a raised surface. Keep tires out of snow, water, ice and mud if possible.



3. Put control levers (transmissions, brakes, etc.) in neutral position and chock wheels to guard against freezing in engaged position.

4. Clean off snow, ice and mud as soon as possible after shutdown.

5. For long time parking do the following:

   Remove batteries and store them in a warm place. Do not store on concrete or in unventilated area.

   Fill fuel tanks to guard against condensation (see page 3-47)

   Drain moisture from air reservoirs (See page 3-72)

6. Make sure tires are inflated to 95 psi (655 kPa) for front and pusher axles, and 85 psi (586 kPa) for tandem axle.

7. Check cooling system, and service if necessary to insure protection against extreme cold.

   Follow procedures in FM 9-207

   If proper antifreeze to protect against existing temperatures is not available, notify organizational maintenance.

UNUSUAL TERRAIN

Off-Road Guidelines

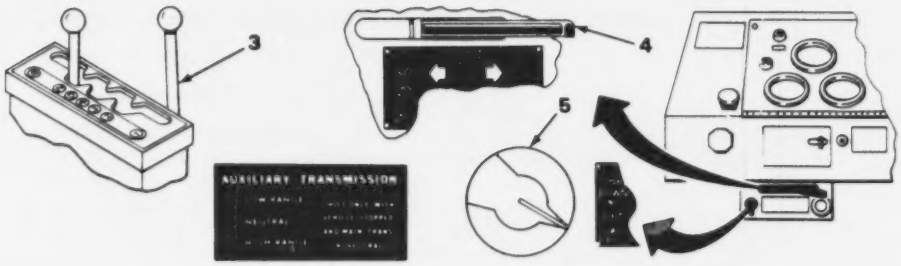
CAUTION

Shifting the auxiliary transmission while M911 Truck Tractor is moving may cause damage to transmission and/or drive train.

1. Use auxiliary transmission LOW RANGE (3) when more pulling power is needed.

UNUSUAL TERRAIN – CONTINUED

2. Using pusher axle controls (4) and (5) raise pusher axle for off road conditions as drive axles will support load and, if pusher axle is lowered, pusher axle shock absorbers may be damaged.

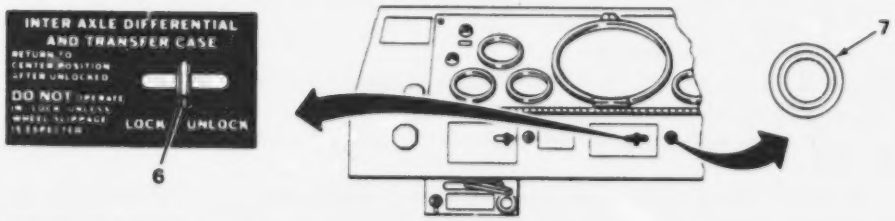


CAUTION

Do not lock differentials while turning a corner or while tires are slipping. Damage to drive train may result.

3. Move INTER-AXLE DIFFERENTIAL AND TRANSFER CASE LOCK/UNLOCK control lever (6) to LOCK position to gain traction on slippery ground surface. All three driving axles will receive full torque.

4. Move LOCK/UNLOCK control lever (6) to unlock position when surface traction returns to normal, wait for indicator light (7) to go off showing the locking mechanism disengaged, and return the lever to center position.



Wooded and Rocky Terrain

CAUTION

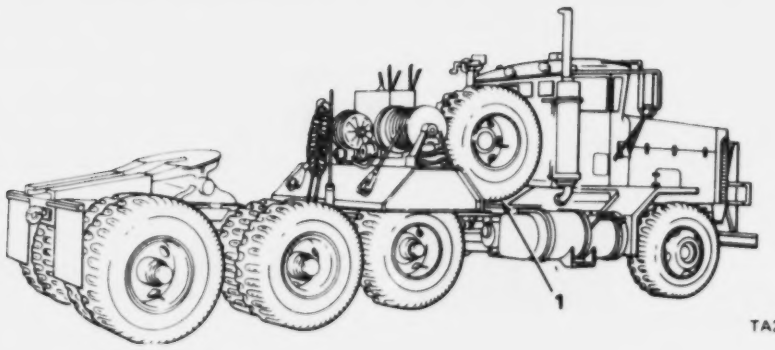
Be sure you can clear obstructions. Hitting rocks, stumps, and low hanging tree limbs can cause disabling equipment damage.

1. Stop and check to be sure the M911 Truck Tractor will clear obstructions such as rocks, stumps and tree limbs before driving over or under them.

2. Be sure you have a serviceable spare tire and wheel assembly (1), because there is a greater chance of tire damage.

TA220888

UNUSUAL TERRAIN – CONTINUED



TA205142

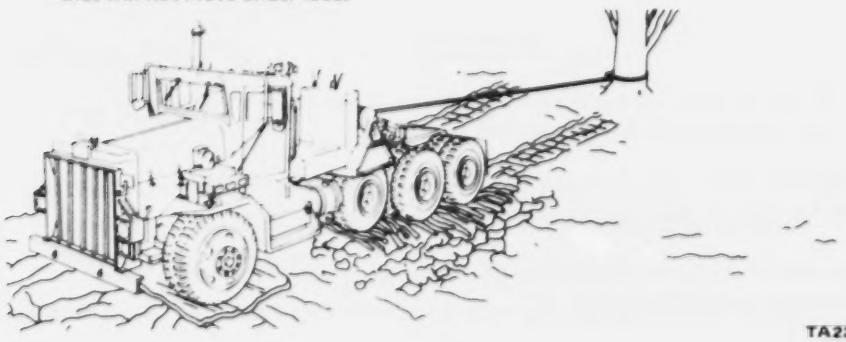
Mud and Other Soft Surfaces

1. Stop and check surface conditions before entering soft areas.
2. Select transmission gear range to get power needed in soft area with minimum slipping. Enter soft area at medium engine rpm.
3. Keep accelerator pedal steady and keep the M911 Truck Tractor moving until on solid ground again.

CAUTION

Exercise caution when stuck, or when loss of traction is experienced, to prevent bouncing. If bouncing is experienced, let up on the throttle and gradually increase engine rpms to move the vehicle.

4. If M911 Truck Tractor is stuck, try to pull it out using low range. Place boards, brush, and similar materials under tires to give extra traction if needed.
5. If M911 Truck Tractor is stuck and not coupled to semitrailer, use winches to help pull it out. Attach winch cables to a large tree trunk, another vehicle, or heavy solid object that will not move under load.



TA220889

UNUSUAL TERRAIN – CONTINUED

Sand

1. Reduce tire pressure when driving on soft sand and over dunes.

   Never release so much pressure that tires slip on rims.

   Drive at low speeds when tire pressure is reduced.

   Inflate tires to normal pressure when conditions improve. Inflate front and pusher axles to 95 psi (650 kPa) and tandem axles to 85 psi (586 kPa).

2. Keep steady even movement with both transmissions in low range. Keep M911 Truck Tractor rolling without straining the engine and power train.

CAUTION

Exercise caution when stuck, or when loss of traction is experienced, to prevent bouncing. If bouncing is experienced, let up on the throttle and gradually increase engine rpms to move the vehicle.

3. If M911 Truck Tractor bogs down, do not continue to work it until buried.

   Shovel a path ahead of each tire.

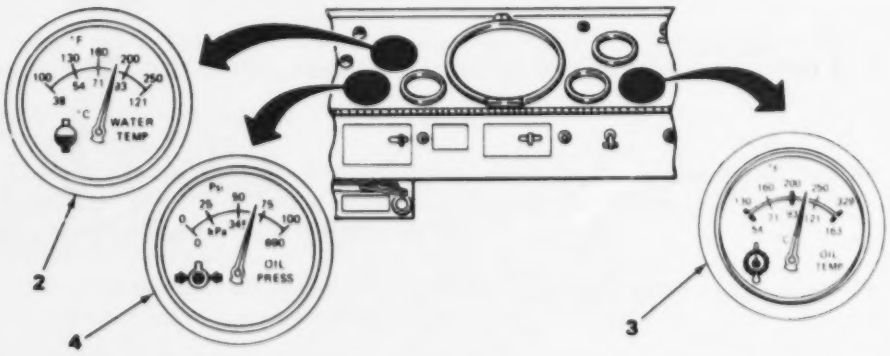
   Place boards, brush, channels, canvas, or similar material under and in front of drive tires.

   If M911 Truck Tractor cannot be freed under its own power, use winches if possible or have it towed out.

4. When operating in muddy, sandy or dusty areas, do the following:

   Make sure tire valve stem has a cap.

   Check WATER TEMPerature gage (2), transmission OIL TEMPerature gage (3), and OIL PRESSure gage (4) often.

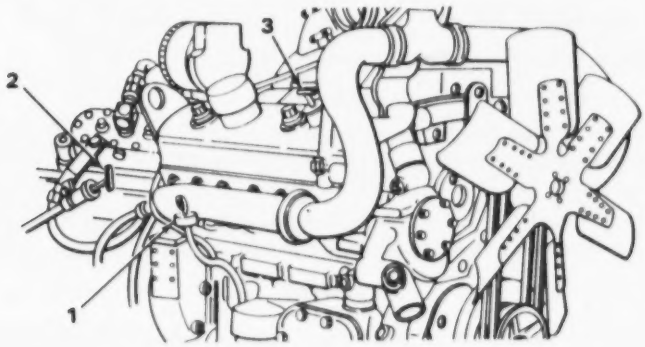


If M911 Truck Tractor overheats, stop and find out why. Service, or if necessary, notify organizational maintenance.

TA220890

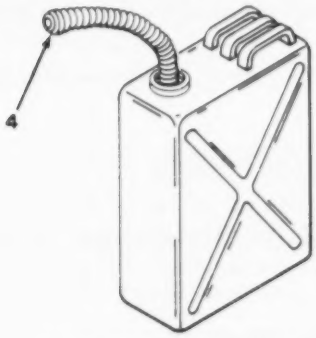
UNUSUAL TERRAIN – CONTINUED

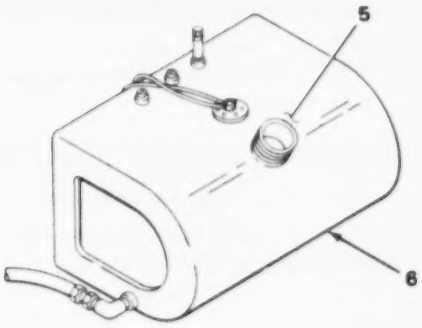
Clean sand and dirt from engine and transmission oil dipstick tubes (1) and (2) before removing to check oil levels. Clean around oil filler cap (3) before adding oil.



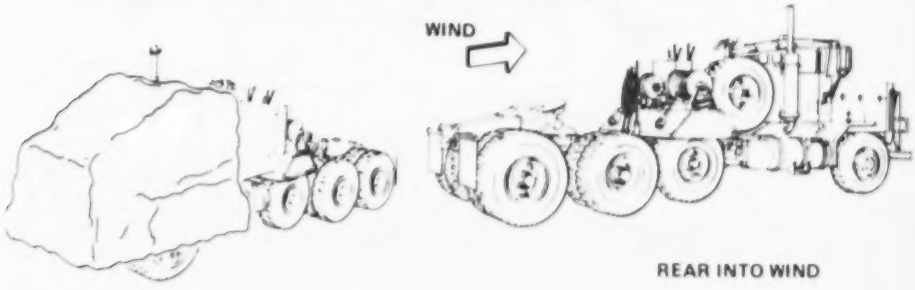
Clean, inspect, and lubricate moving parts more often than in usual conditions (see LO 9-2320-270-12).

Clean fuel container spout (4) and areas around fuel tank filler cap (5) before adding fuel. In very sandy and dusty areas, filter or strain fuel when filling tanks (6).





When parking overnight or for extended periods, park with rear of M911 Truck Tractor toward the wind if possible, or cover radiator and window glass with tarpaulin if available.



TA220891

UNUSUAL TERRAIN – CONTINUED

Driving in Snow and Ice

Start moving by accelerating slowly with auxiliary transmission in high range and main transmission in D position. This will help avoid spinning tires.

Drive at slower speeds.

Signal what you plan to do sooner than in normal driving.

Pump brakes to help avoid skidding and give early warning that you are going tc stop.

Keep greater distance between you and the vehicle ahead.

Keep windshields, windows, mirrors, headlights, stoplights and body lights clean and clear of snow and ice. Use HEATER-DEFROST to help keep window glass clear.

Go down medium grades in gear range normally used to climb the same grade. On steep or very slippery grades, use at least one gear range lower.

After driving through slush or water, drive slowly and put enough pressure on service brake pedal to cause a slight drag. When heat from dragging brakes has dried them, release brake pedal and go back to normal speed.

Stop and inspect a difficult section of road before driving on it. Select the main transmission gear best suited for the road and then continue.

If tires start spinning and forward motion stops, back up and try again. It may be necessary to rock the M911 Truck Tractor by shifting to D range, accelerating lightly, and shifting to reverse (R) again when forward motion stops, and then back to D range (Do not shift to reverse and back to drive while M911 Truck Tractor is in motion). Try not to spin tires.

Stopping on Snow and Ice

1. Ease up on accelerator with transmission in gear.

2. Apply service brakes lightly and release, apply and release, and continue while making use of engine braking at the same time. Use trailer brakes to assist the vehicle to slow down, stop, and prevent jackknifing when towing a semitrailer.

3. Do not brake suddenly on slick roads. This may cause the M911 Truck Tractor to skid.

Parking on Snow and Ice

1. Place boards, brush, or other material that will give traction under the tires. This will guard against tires freezing to the ground or becoming pocketed in ice, and will give traction when you start moving again.

2. Chock tires and put transmissions in neutral. Do not apply parking brake. The brake shoes may freeze in the applied position.

UNUSUAL TERRAIN – CONTINUED

Salt Water Areas

Operation in salt water areas will cause rapid rusting and corrosion of metal parts. The following procedures will help slow the rust and corrosion process:

1. Wash M911 Truck Tractor thoroughly with fresh water after operation.
2. Dry off standing water.
3. Lubricate often (See LO 9-2320-270-12).
4. Apply lubricant to unpainted surfaces.

FORDING

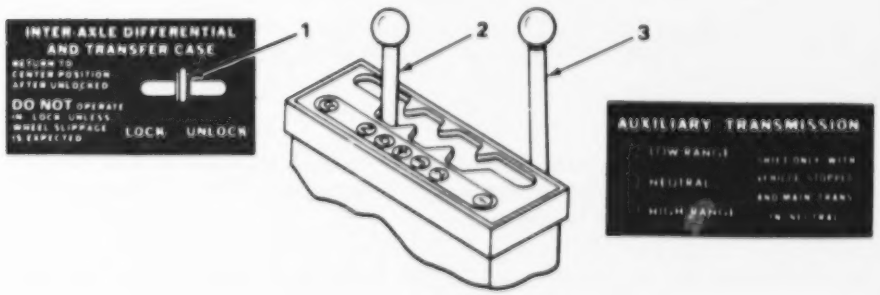
Before Fording use the following procedure and TM 9-238, Deepwater Fording of Ordnance Material.

1. Check water body bottom surface condition.

   Make sure bottom surface is hard enough to allow fording at no more than 28 inches (66 cm).

   If bottom surface is too soft, do not ford.

2. Make sure engine is operating properly.
3. Move INTER-AXLE DIFFERENTIAL LOCK/UNLOCK control (1) to LOCK position to engage driveline locking system. Return control (1) to center position when locked.
4. Put auxiliary transmission shift lever (2) in LOW RANGE.
5. Put main transmission shift lever (3) in 1 position.



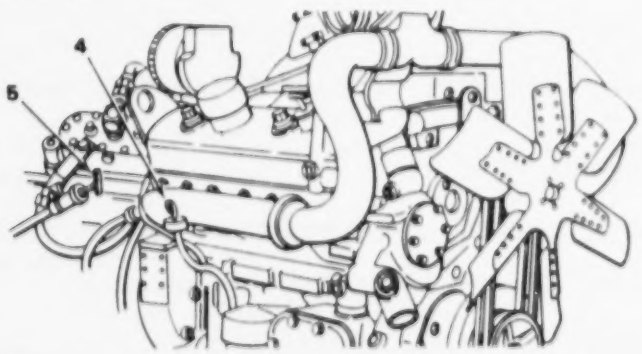
6. Ford at speed of 3 to 4 mph.

TA220892

FORDING – CONTINUED
After Fording

Water may have entered components or possibly contaminated the fluid systems. If water has entered components, it must be removed before it can cause damage to systems, surfaces, or equipment. The following checks will help find and get rid of unwanted water:

1. Apply brakes several times to dry brake shoe linings. Be sure brakes are working properly before driving at normal speeds.
2. Let engine run a while after fording to drive out water.
3. If salt water was forded, wash M911 Truck Tractor thoroughly with fresh water.
4. Drain and dry any areas where water has collected.
5. Lubricate unpainted surfaces to guard against rust and decay.
6. Check all electrical wiring and components for wetness. Dry any wet areas thoroughly.
7. Check engine oil and transmission oil dipsticks (4) and (5) for signs of water. If water bubbles, water streaks, condensation, or unusually high oil level is found, notify organizational maintenance.



8. Dry and lubricate all crew level lubrication points and notify organizational maintenance to perform after fording lubrication checks and services (See LO 9-2320-270-12
9. Notify organizational maintenance of any services or repairs the M911 Truck Tractor needs before returning it to normal use.

TA220893

MANUALI Y RELEASING AND RESETTING SPRING BRAKES

An air system pressure loss to below 60 psi (414 kPa) will allow spring brake units on the tandem rear axles to apply the rear brakes. To move the M911 Truck Tractor, the power springs in the spring brake chambers must be compressed. When there is not enough air pressure, the springs must be compressed and reset manually. This is done in the following steps:

Releasing Brakes by Compressing Spring Brake Power Springs

WARNING

Failure to block wheels before releasing the spring brakes could result in vehicle runaway, causing injury to personnel and damage to equipment.

NOTE

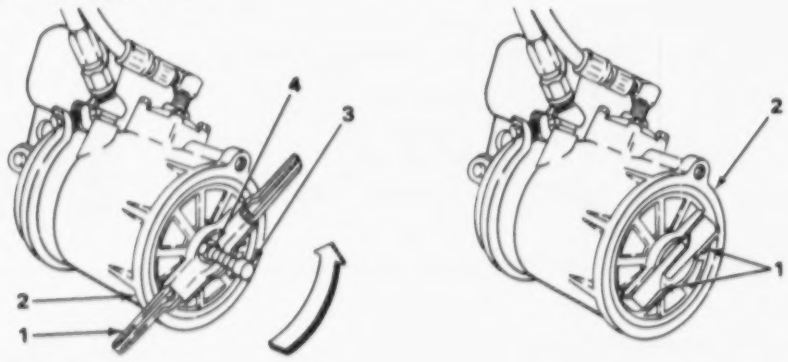
There are four spring brake chambers on the M911 Truck Tractor. There is one left and one right forward of front tandem axle, and one left and one right behind rear tandem axle. All four spring brake chambers operate the same. Only the right rear is addressed below.

1. Chock wheels.
2. Open two hinged handles (1) on spring brake chamber (2).
3. Rotate handles (1) clockwise until center bolt head (3) sticks out about 4 inches (10 cm) or reaches stop.
4. Release and fold handles.
5. Repeat steps 2, 3 and 4 for remaining three spring brake chambers (2).

Resetting Brakes by Releasing Spring Brake Power Springs

1. Open two hinged handles (1) on spring brake chamber (2).
2. Rotate handle (1) counterclockwise until center bolt (3) is flush with top of hex nut (4).
3. Fold hinged handles (1) over hex nut (4).
4. Repeat steps 1, 2, and 3 for remaining three spring brake chambers (2).
5. Remove chocks.

MANUALLY RELEASING AND RESETTING SPRING BRAKES – CONTINUED

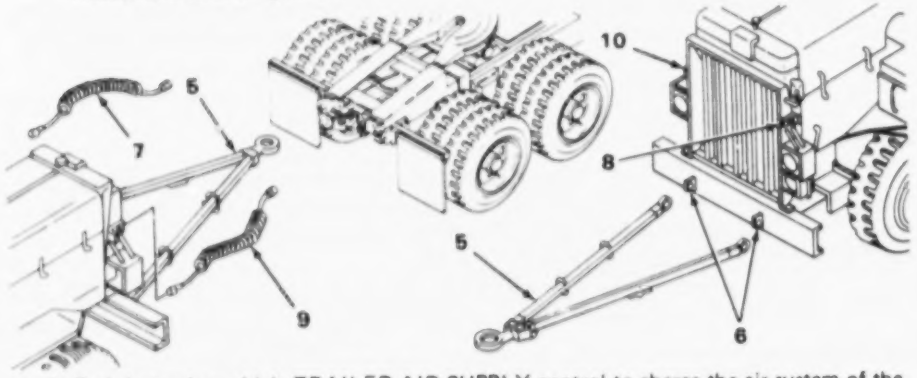


BEING TOWED

The M911 Truck Tractor may be towed in three configurations: All axles on the ground, front axle lifted off the ground, and rear tandem axles lifted off the ground.
See FM 21-305 and FM 20-22 for towing guidelines in addition to below, and use of signal and warning kits.

All Axles on Ground

1. Attach tow-bar (5) to disabled tractor at towing eyes (6) and to towing vehicle pintle.
2. Attach red emergency air hose (7) to left front gladhand (8) of disabled M911 Truck Tractor and to towing vehicle.
3. Attach blue service air hose (9) to right front gladhand (10) of disabled M911 Truck Tractor and to towing vehicle.



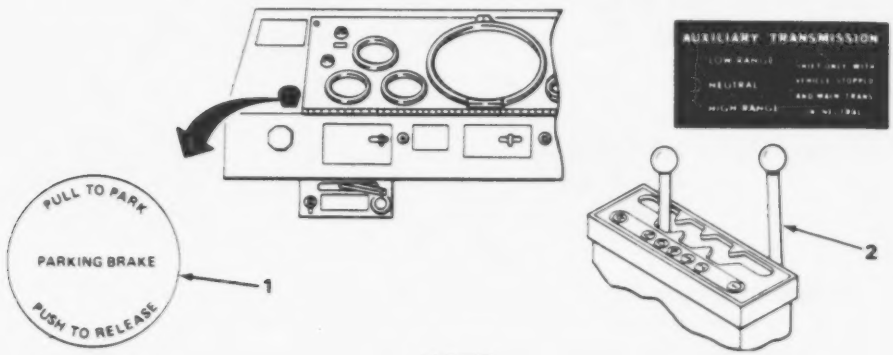
4. Push in towing vehicle TRAILER AIR SUPPLY control to charge the air system of the disabled M911 Truck Tractor.

TA220894

BEING TOWED – CONTINUED

5. Push in disabled M911 Truck Tractor PARKING BRAKE control (1) to release parking brake.

6. Place disabled tractor auxiliary transmission shift lever (2) in neutral.



NOTE

Disabled tractor service brakes and brake lights will operate when tow vehicle service brakes are applied.

If air is not available to disabled Tractor, it may be necessary to manually release spring brakes or tow with tandem axles lifted off the ground.

7. Release tow vehicle PARKING BRAKE.

Front Axle Lifted Off the Ground

CAUTION

When towing the M911 Truck Tractor with the front axle lifted off the ground it is necessary to disconnect the universal joint at the input to forward tandem axle to prevent damage to the planetary differential in the transfer case.

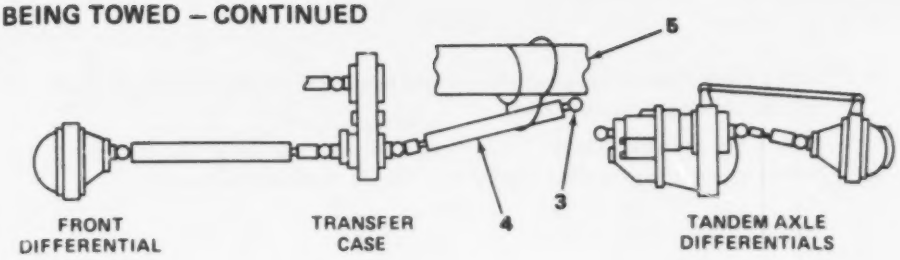
NOTE

The M911 Truck Tractor may be towed up to 1/2 mile (0.8 kilometer) at speeds up to 10 mph (16 km/h) without disconnecting the driveline. If this is done, the auxiliary transmission must be in neutral position.

1. Disconnect universal joint (3) on rear of intermediate propeller shaft (4) and tie it up to frame (5) or slide off and stow. (Normally done by organizational maintenance).

TA220895

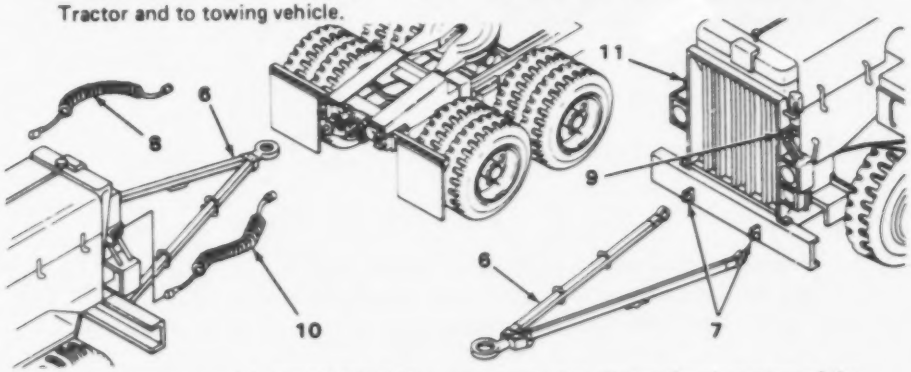
BEING TOWED – CONTINUED



2. Attach tow-bar (6) to M911 Truck Tractor at towing eyes (7) and to towing vehicle pintle.

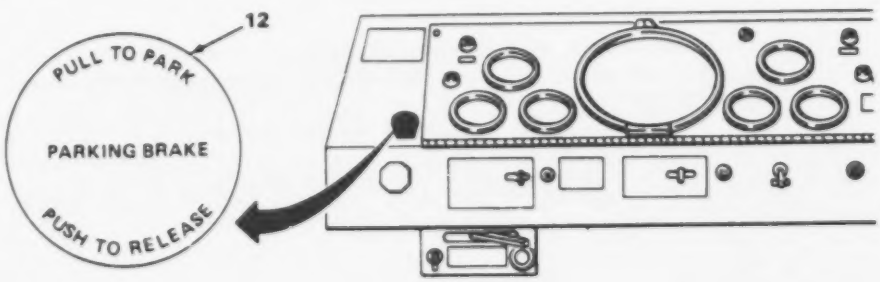
3. Attach red emergency air hose (8) to left front gladhand (9) of disabled M911 Truck Tractor and to towing vehicle.

4. Attach blue service air hose (10) to right front gladhand (11) of disabled M911 Truck Tractor and to towing vehicle.



5. Push in towing venicle TRAILER AIR supply control to charge the air system of the disabled M911 Truck Tractor.

6. Push in disabled M911 Truck Tractor PARKING BRAKE control (12).



TA220896

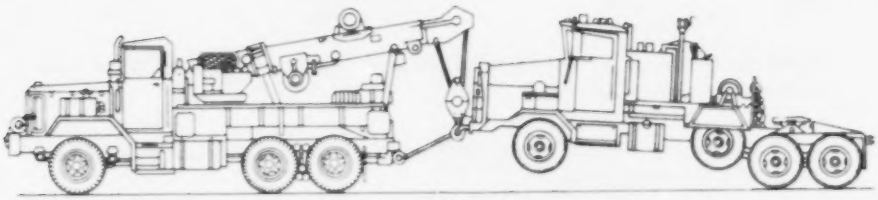
BEING TOWED – CONTINUED

NOTE

M911 Truck Tractor rear service brakes and brake lights will operate when tow vehicle service brakes are applied.

If air is not available to M911 Truck Tractor, it may be necessary to manually release spring brakes to allow towing with tandem axles on the ground.

7. Raise front axle off of ground.
8. Release tow vehicle PARKING BRAKE.



Rear Tandem Lifted Off the Ground

CAUTION

When towing the M911 Truck Tractor with the tandem axles lifted off the ground, it is necessary to disconnect the universal joint at the input to the front axle to prevent damage to the planetary differential in the transfer case.

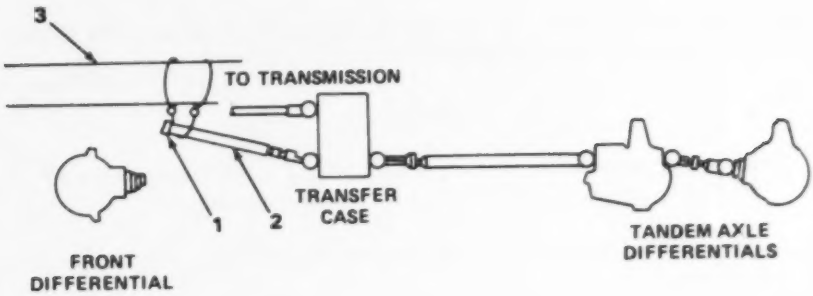
NOTE

The M911 Truck Tractor may be towed up to 1/2 mile (0.8 kilometers) at speeds up to 10 mph (16 km/h) without disconnecting the driveline. If this is done, the auxiliary transmission must be in neutral.

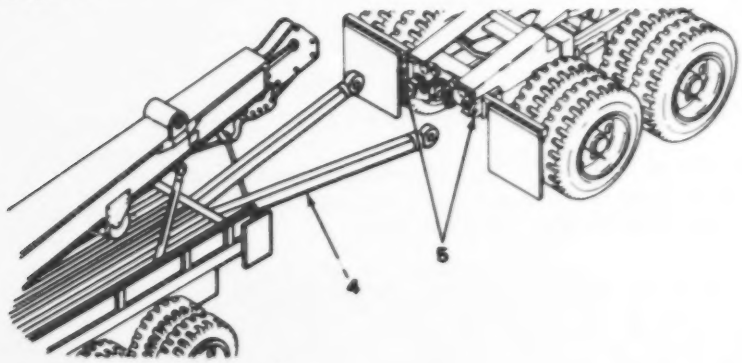
1. Disconnect universal joint (1) at front of front propeller shaft (2) and tie it up to frame (3) or pull off and stow. (Normally done by organizational maintenance).

TA220897

BEING TOWED – CONTINUED



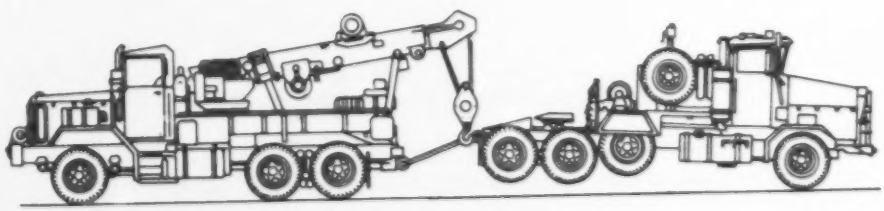
2. Attach tow-bar (4) to disabled M911 Truck Tractor at rear towing eyes (5) and to tow vehicle's pintle.



3. Raise tandem axles off the ground.

NOTE

There are no brakes or brake lights available when towing the M911 Truck Tractor with the tandem axles off the ground.



TA220898

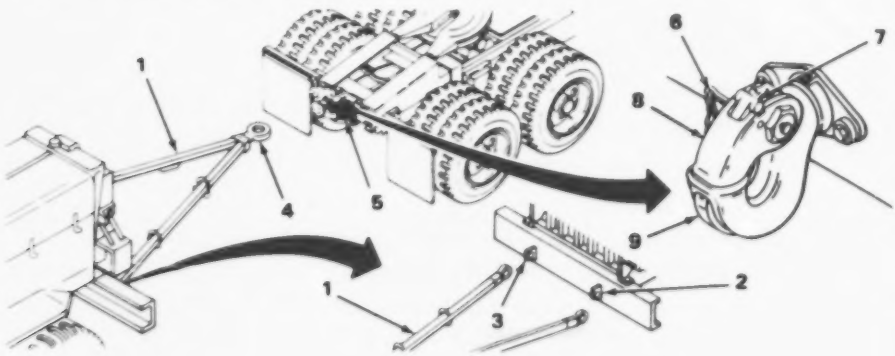
TOWING

The M911 Truck Tractor may be used as a tow vehicle if towing guidelines in FM 21-305, FM 20-22 and use of signal and warning kit information are followed.

CAUTION

Before towing another vehicle, read and follow towing instructions in the disabled vehicle operator's manual to prevent damage to equipment.

1. Attach tow-bar (1) (provided by organizational maintenance) to disabled vehicle towing eyes (2) and (3).
2. Attach tow-bar eye (4) to M911 Truck Tractor pintle (5) as follows:
   a. Take out pintle cotter pin (6).
   b. Pull latch (7) to open lock (8).
   c. Place tow bar eye (4) in hook (9).
   d. Push lock (8) down. Latch (7) will go to closed position.
   e. Put cotter pin (6) in lock (8) to secure.



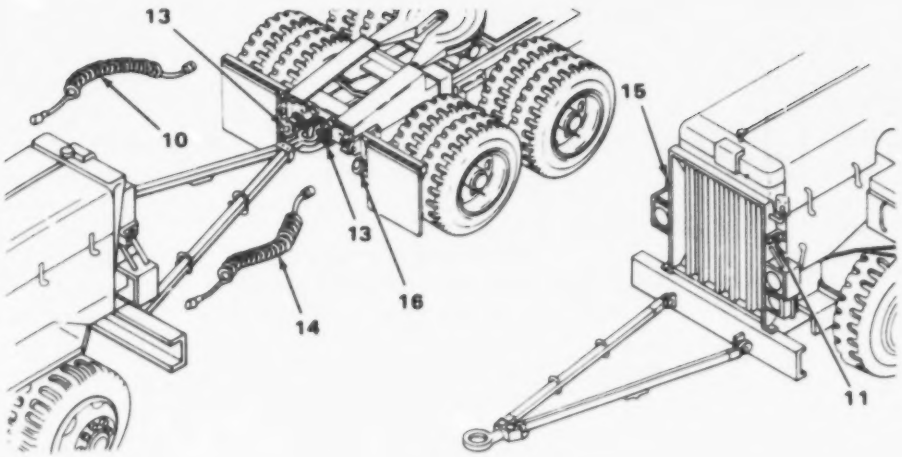
NOTE

If disabled vehicle is equipped with tow kit air hook-up, do steps 3 through 7.

3. Attach red emergency air hose (10) to left front gladhand (11) of disabled vehicle and to left rear gladhand (12) on disabled M911 Truck Tractor cross member (13).
4. Attach blue service air hose (14) to service gladhand (15) of disabled vehicle and to right rear gladhand (16) on M911 Truck Tractor cross member (13).

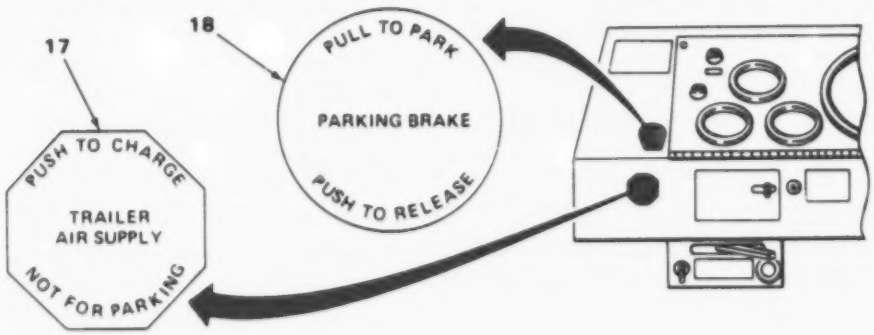
TA220899

TOWING – CONTINUED



5. Push in towing M911 Truck Tractor TRAILER AIR supply control (17) to charge the air system of the disabled vehicle.

6. Push in M911 Truck Tractor PARKING BRAKE control (18) to release parking brakes of both vehicles.



NOTE

If air is not available to disabled vehicle, it may be necessary to manually release spring brakes to allow towing with rear axles on the ground.

Disabled vehicle rear service brakes and brake lights will operate when tow vehicle service brakes are applied.

TA220900

CHAPTER 3

MAINTENANCE INSTRUCTIONS

OVERVIEW

This chapter has lubrication instructions, troubleshooting symptom index and procedures, and authorized crew level maintenance procedures.

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Section II.	TROUBLESHOOTING PROCEDURES	3-1
Section III.	MAINTENANCE PROCEDURES	3-43

Section I. LUBRICATION INSTRUCTIONS

GENERAL

Lubrication requirements for crew level maintenance are contained within maintenance procedures and in the lubrication order (LO 9-2320-270-12).

LUBRICATION INSTRUCTIONS

See LO 9-2320-270-12 for instructions and responsibilities in lubricating the M911 Truck Tractor. The lubricating order shows the points to lubricate and the interval to lubricate each point.

Section II. TROUBLESHOOTING PROCEDURES

GENERAL

The troubleshooting symptom index and troubleshooting procedures contained in this section will give you information needed to find and correct problems you may find while operating the M911 Truck Tractor.

a. The table lists the common malfunctions which you may find during operation or maintenance of the M911 Truck Tractor or its components. You should perform the tests/inspections and corrective action in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Troubleshooting Symptom Index

MALFUNCTION	TROUBLESHOOTING PROCEDURE PAGE
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MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE FAILS TO CRANK

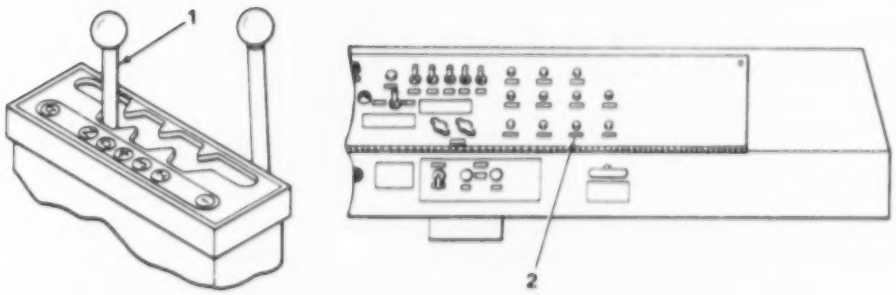
Step 1. Check main transmission range selector lever (1) position.

If selector lever (1) is not in neutral (N), move it to neutral (N) position and try to start engine.

Step 2. Check IGN START circuit breaker (2).

a. If circuit breaker is out reset and attempt to start engine.

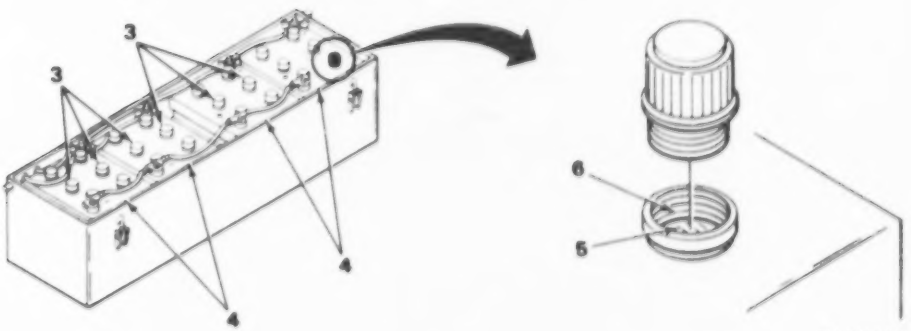
b. If circuit breaker trips again notify Organizational Maintenance.



Step 3. Check electrolyte level in each cell (3) of each battery (4).

a. If electrolyte is not above top of plate (5) in each cell, add distilled water (item 3, Appendix D) to raise level to bottom of ring (6).

b. If electrolyte level does not stay above plate (5), notify Organizational Maintenance.



MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE FAILS TO CRANK – CONTINUED

Step 4. Inspect for corroded, loose, and broken battery cables (7).

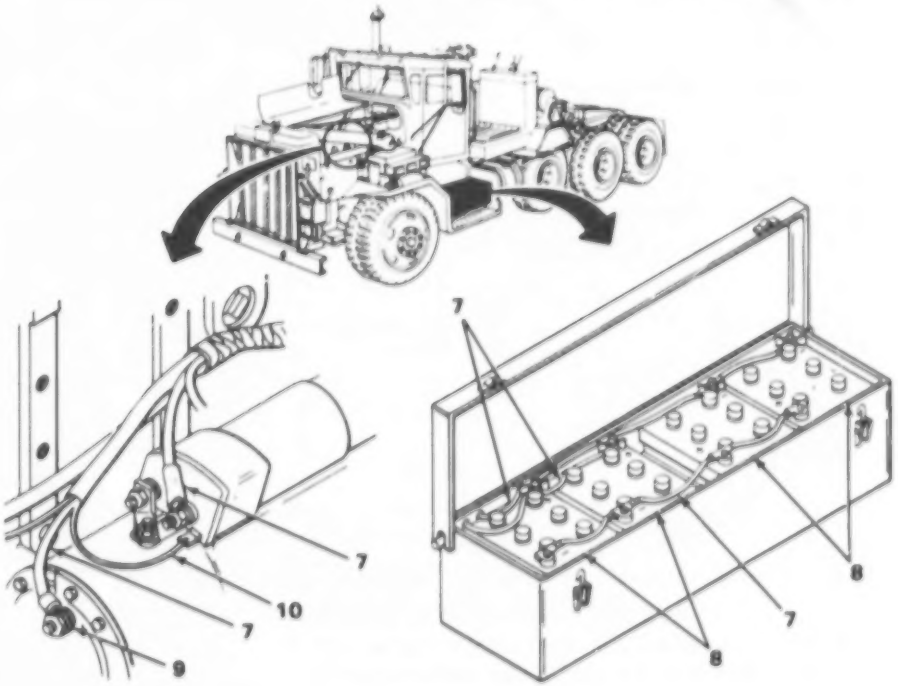
a. If cables (7) are corroded, clean with baking soda (item 23, Appendix D) and water solution.

b. If cables (7) are loose or broken at batteries (8), ground (9), or starter (10), notify Organizational Maintenance.

Step 5. Try to jump start engine with another 24 Vdc power source. (See page 2-104).

a. If jump start works, batteries are discharged and alternator may recharge them during operation.

b. If jump start does not work, or batteries do not recharge during operation, notify Organizational Maintenance.



END OF PROCEDURE

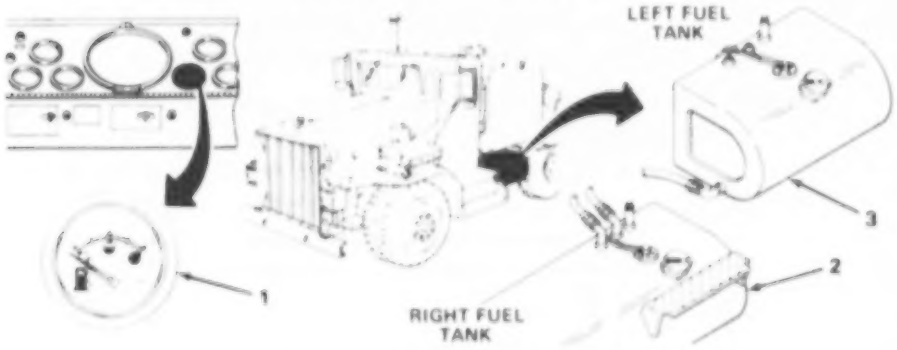
TA220902

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE CRANKS BUT FAILS TO START

Step 1. Check fuel level on fuel gage (1) and in fuel tanks (2) and (3).

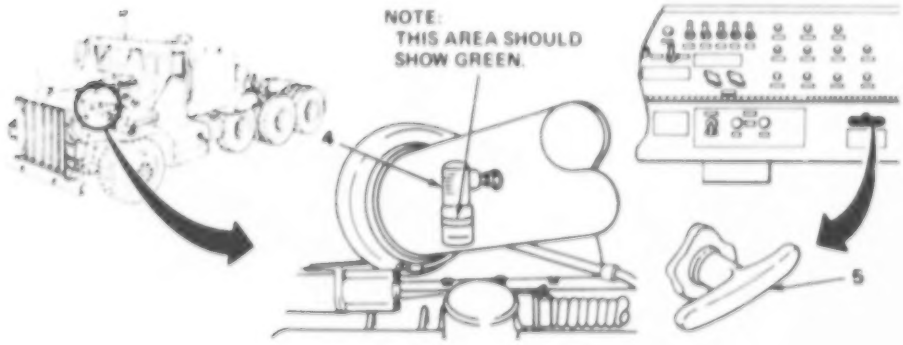
If fuel level is low fill with diesel fuel oil (see page 3-47).



Step 2. Check color on air cleaner restriction indicator (4).

If restriction indicator on left side of engine shows red instead of green, notify Organizational Maintenance.

Step 3. Check ether starting aid QUICK START control (5) operating procedure if outside temperature is below 40°F (4°C) (See page 2-68) and attempt to start using QUICK START.



TA220903

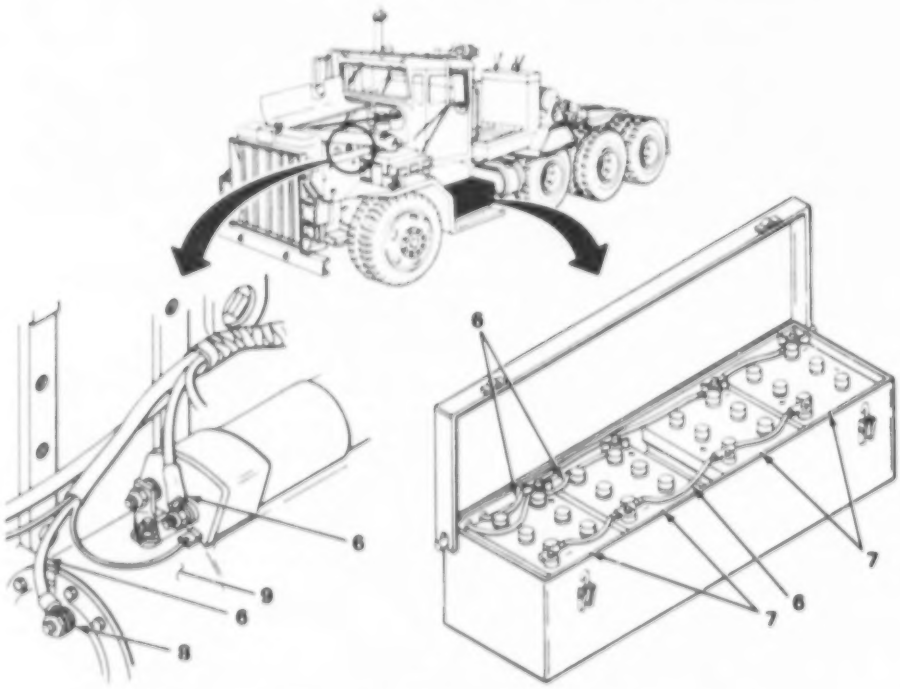
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE CRANKS BUT FAILS TO START – CONTINUED

Step 4. Inspect for corroded, loose, and broken battery cables (6).

a. If cables (6) are corroded, clean with baking soda and water solution.

b. If cables (6) are loose or broken at batteries (7), ground (8), or starter (9), notify Organizational Maintenance.



Step 5. Try to jump start engine with another 24 Vdc power source. (See page 2-103).

a. If jump start works, batteries are discharged and alternator may recharge them during operation.

b. If jump start does not work, or batteries do not recharge during operation notify Organizational Maintenance.

END OF PROCEDURE

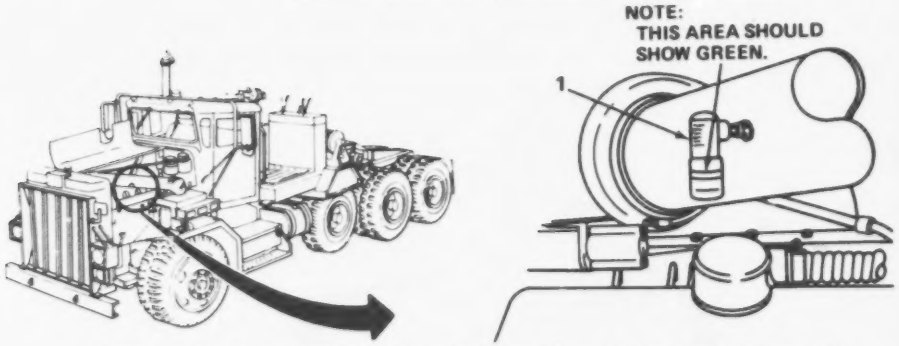
TA220904

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE STARTS, BUT MISFIRES OR RUNS ROUGHLY AFTER WARM-UP

Step 1. Check color on air cleaner restriction indicator (1).

If restriction indicator (1), on left side of engine, shows red instead of green, notify Organizational Maintenance.



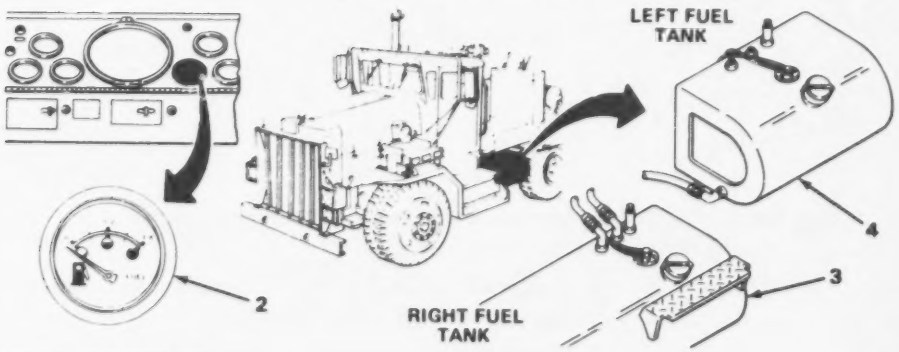
Step 2. Check for low fuel level on fuel gage (2) and in fuel tanks (3) and (4).

If fuel level is low, fill with fuel (see page 3-47).

Step 3. Check for dirt and for gasoline smell in fuel tanks (3) and (4).

a. If dirt or gasoline is found or smelled, notify Organizational Maintenance.

b. If engine continues to misfire or run roughly, notify Organizational Maintenance.



END OF PROCEDURE

TA220905

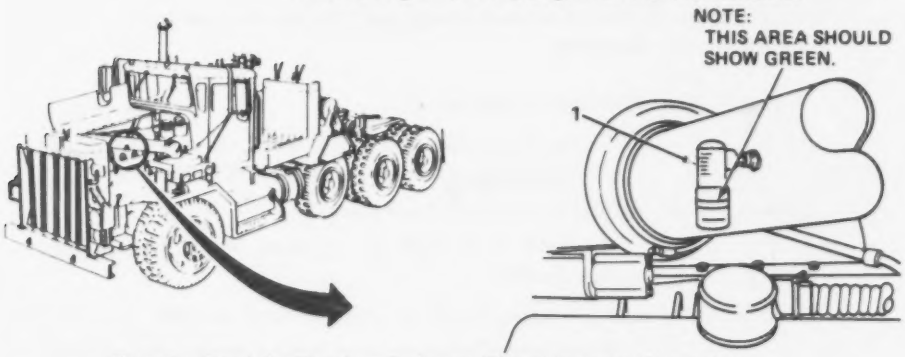
Troubleshooting – Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE WILL NOT IDLE PROPERLY

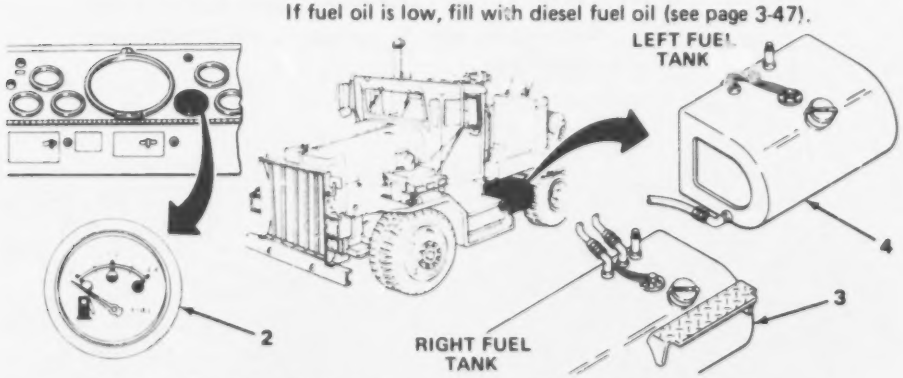
Step 1. Check color on air cleaner restriction indicator (1).

If restriction indicator (1), on left side of engine shows red instead of green, notify Organizational Maintenance.



Step 2. Check fuel level on fuel gage (2) and in tanks (3) and (4).

If fuel oil is low, fill with diesel fuel oil (see page 3-47).



Step 3. Check for dirt in fuel tanks (3) and (4) and for the smell of gasoline.

a. If dirt or gasoline is found or smelled, notify Organizational Maintenance.

b. If engine still does not idle propelly, notify Organizational Maintenance.

END OF PROCEDURE

TA220906

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE OVERHEATS (WATER TEMP Gage over 200°F) (93°C)

WARNING

Failure to remove hot radiator cap with cloth and in two steps, counter-clockwise to first stop to let pressure release, and then remove, may result in serious injury to personnel.

Step 1. Check water level in radiator (1).

If water level is low (one inch (2.5 cm) below filler neck (2)), fill with proper antifreeze solution (item 1, Appendix D).

Step 2. Check for leaks in radiator (1) and hoses (3).

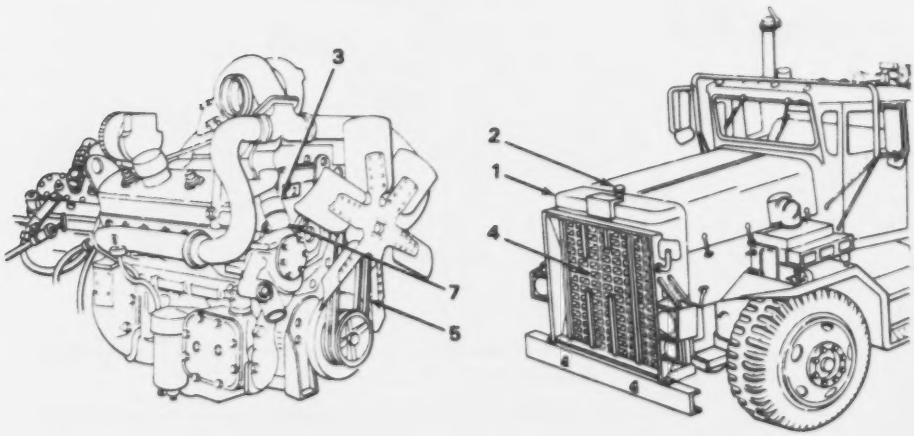
If radiator (1) or hoses (3) are leaking, notify Organizational Maintenance.

Step 3. Check radiator cooling fins (4) for mud, ice, snow and dirt.

If cooling fins (4) are clogged, remove material causing clog.

Step 4. Check cooling fan belts (5) for looseness.

If cooling fan belts (5) are loose, notify Organizational Maintenance.



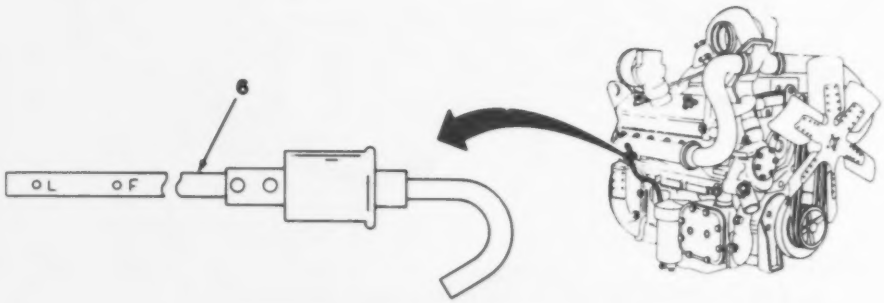
TA220907

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE OVERHEATS (WATER TEMP Gage over 200°F) (93°C) – CONTINUED

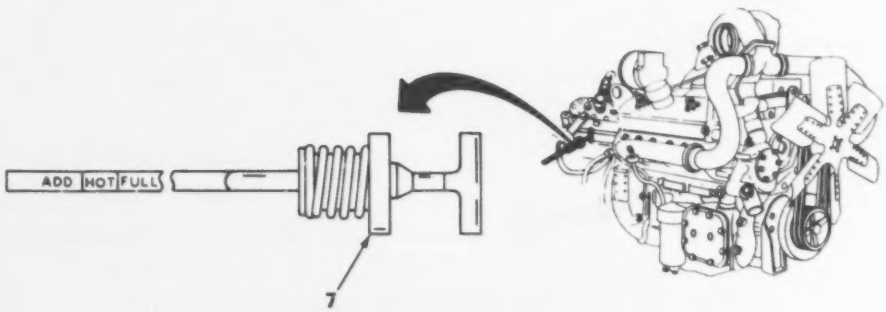
Step 5. Check engine oil level on dipstick (6).

If oil level is not between L (low) anf F (full) marks, add proper grade of oil to bring level to L mark with engine cold, or between L and F when engine is warm (see LO 9-2320-270-12). Do not overfill.



Step 6. Check transmission oil level dipstick (7).

a. If oil level is not between ADD and FULL marks add transmission oil (see LO 9-2320-270-12). If oil is above full mark notify Organizational Maintenance.



b. If engine still overheats, notify Organizational Maintenance.

END OF PROCEDURE

TA220908

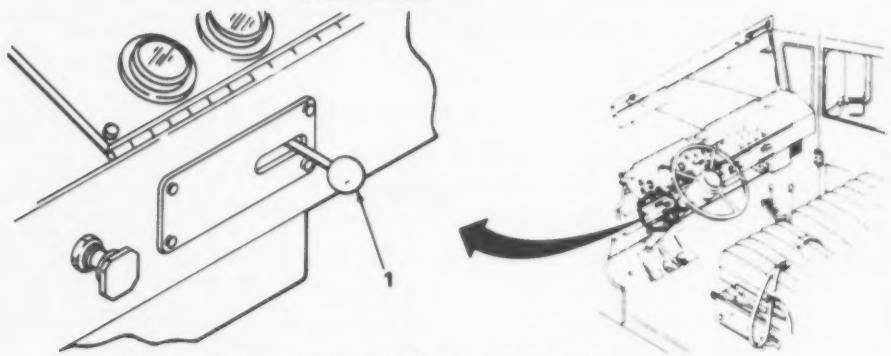
Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION

ENGINE DOES NOT DEVELOP FULL POWER

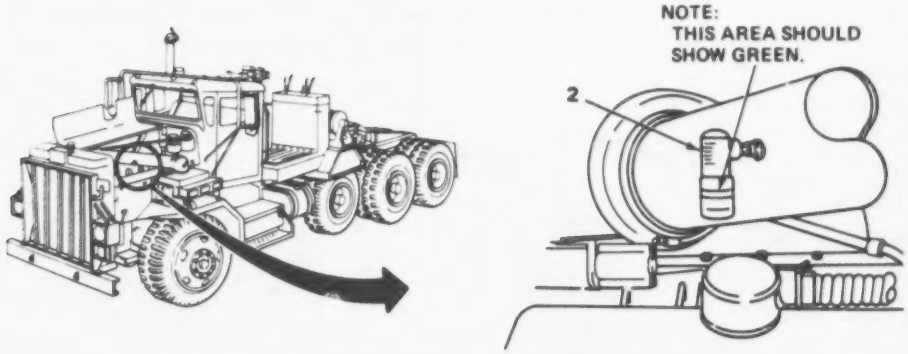
Step 1. Check PTO CONTROL position (1).

If PTO CONTROL (1) is in ENGAGE position, move to DISENGAGE.



Step 2. Check color on air cleaner restriction indicator (2).

a. If restriction indicator (2) is red instead of green, notify Organizational Maintenance.



b. If engine still does not develop full power, notify Organizational Maintenance.

END OF PROCEDURE

TA220909

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

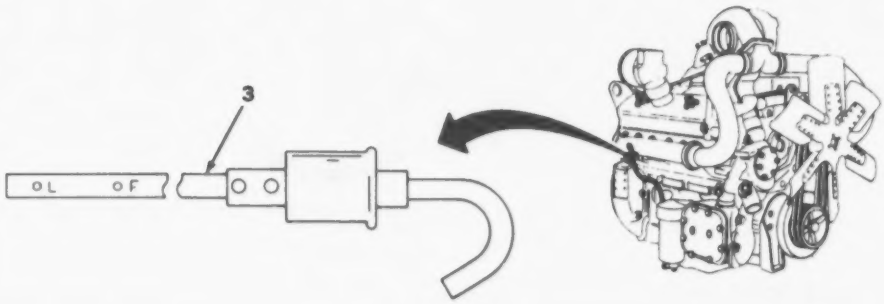
LOW OR NO OIL PRESSURE

NOTE

OIL PRESSure gage should show 50 psi (345 kPa) within 10-15 seconds after engine starts and 50-70 psi (345 to 483 kPa) at 1800 to 2100 rpm.

Step 1. Check engine oil level on dipstick (3).

a. If oil level is not between L (low) and F (full) marks, add proper grade of oil to bring to L mark with engine cold, or between L and F when engine is warm (see LO 9-2320-270-12). Do not overfill.



b. If oil is at level it should be and OIL PRESSure gage still shows low or no oil pressure, notify Organizational Maintenance.

END OF PROCEDURE

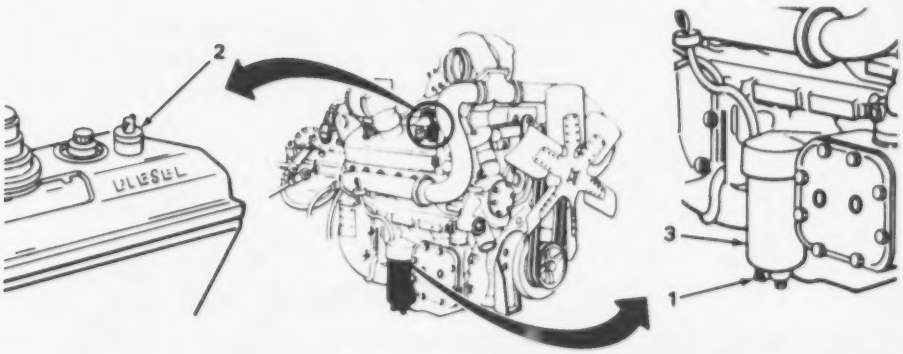
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

HIGH OIL CONSUMPTION

Step 1. Check for loose and/or leaking oil drain pan plug (1), oil filler cap (2), oil filter (3), and other engine oil lines.

a. If oil filler cap (2) is loose, tighten.

b. If oil pan drain plug (1), oil filter (3), or engine oil lines are leaking, notify Organizational Maintenance.



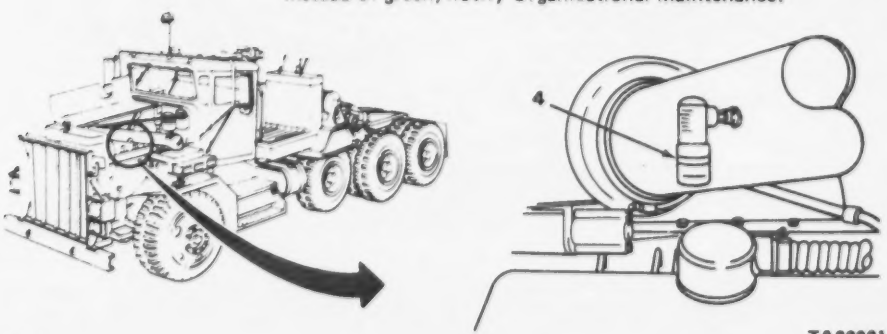
c. If high oil consumption continues, notify Organizational Maintenance.

END OF PROCEDURE

EXCESSIVE BLACK EXHAUST SMOKE (at normal operating temperature)

Step 1. Check color on air cleaner restriction indicator (4).

If restriction indicator (4) on left side of engine shows red instead of green, notify Organizational Maintenance.



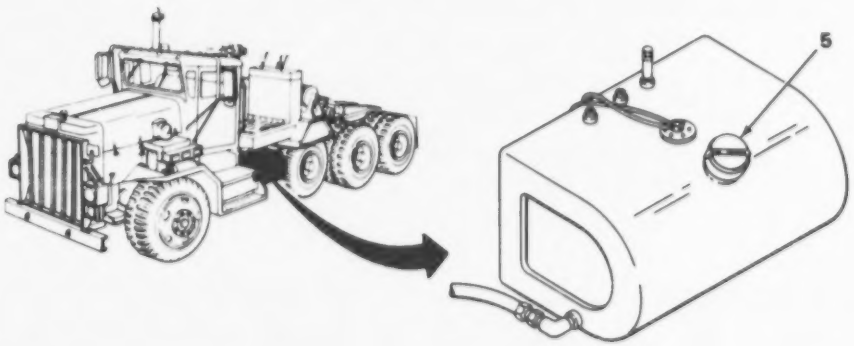
TA220911

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

EXCESSIVE EXHAUST SMOKE (at normal operating temperature) – CONTINUED

Step 2. Check for fuel contamination by opening fuel tank filler cap (5) and look for dirt and water and smell for presence of gasoline.

a. If dirt or gasoline is found or smelled, notify Organizational Maintenance.



b. If exhaust smoke is still excessive, notify Organizational Maintenance.

END OF PROCEDURE

TA220912

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION

ELECTRICAL SYSTEM

ONE OR MORE LIGHT SYSTEMS WILL NOT WORK

Step 1. Check light switch (1) position.

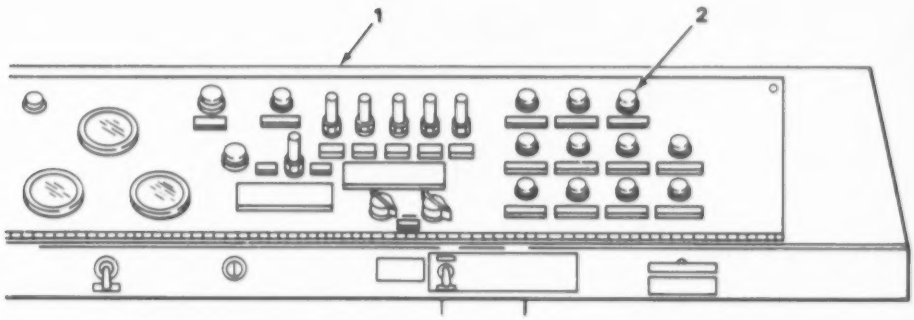
Place light switch (1) in ON position.

Step 2. Check if circuit breaker (2) has tripped.

a. If circuit breaker (2) has tripped, push in to reset.

b. If circuit breaker (2) trips again, notify Organizational Maintenance.

c. If circuit breaker (2) was not tripped, notify Organizational Maintenance.



Step 3. If semitrailer lights are not working, check tractor-to-trailer electrical cable (1) hook-up.

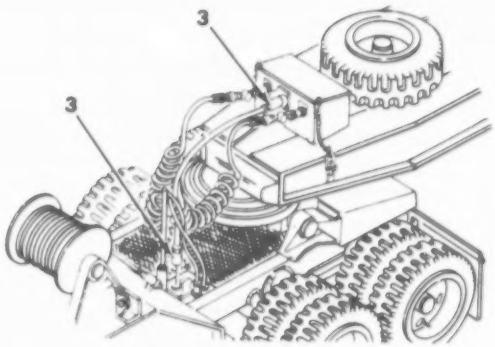
a. If tractor-to-trailer cable (3) is loose or inproperly connected, reconnect it securely.

b. If tractor-to-trailer cable (3) is secure and semitrailer lights are not working, see troubleshooting in applicable semi-trailer TM.

TA220913

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ONE OR MORE LIGHT SYSTEMS WILL NOT WORK – CONTINUED



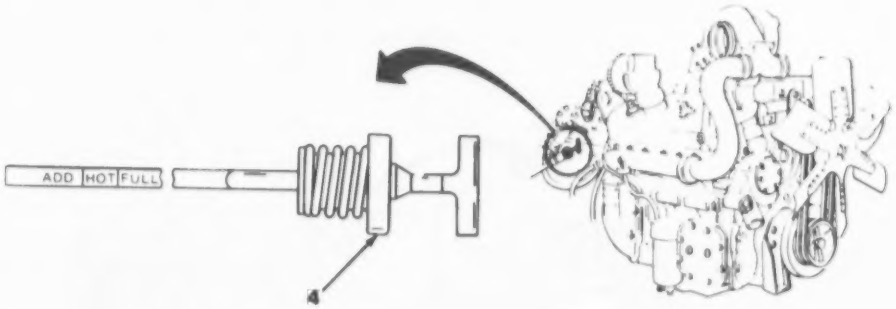
END OF PROCEDURE

MAIN TRANSMISSION

FOAMY OIL ON DIPSTICK

Step 1. Check for high oil level on dipstick (4) with engine running and transmission at normal operating temperature of 160-220°F (71°-104°C).

If oil is above FULL mark on dipstick (4) or is discolored and streaky, notify Organizational Maintenance.



END OF PROCEDURE

TA220914

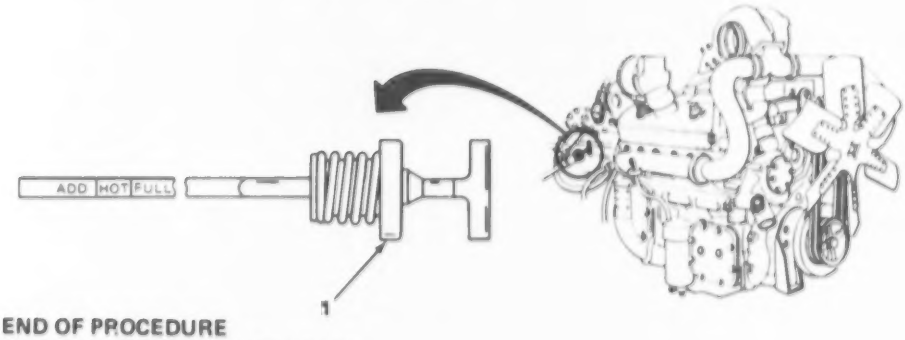
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

OIL LEAKING FROM TRANSMISSION BREATHER

Step 1. Check for foam and high oil level on transmission dipstick (1) with engine running and transmission at normal operating temperature of 160-220°F (71°-104°C)

a. If oil level is above FULL mark on dipstick (1), notify Organizational Maintenance.

b. If oil is streaked or discolored, or if bubbles are found, notify Organizational Maintenance of possible water in transmission.



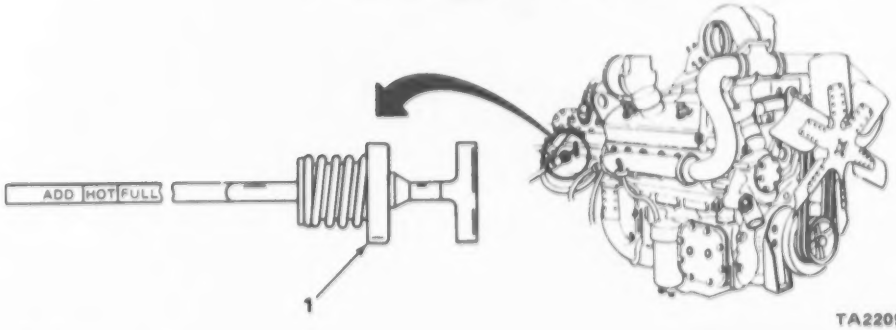
END OF PROCEDURE

TRANSMISSION OIL OVERHEATS

Step 1. Check transmission oil level dipstick (1).

a. If oil level is low, add proper grade of oil to raise level to FULL mark on dipstick (see LO 9-2320-270-12).

b. If oil level is high, notify Organizational Maintenance.



TA220918

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

TRANSMISSION OIL OVERHEATS – CONTINUED

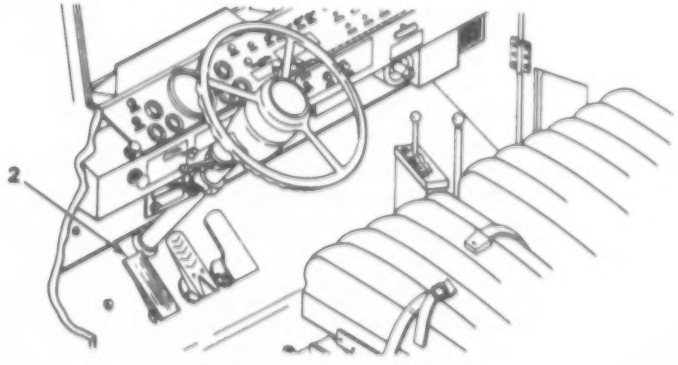
Step 3. Check procedures for proper hydraulic retarder operation.

CAUTION

Long continuous use of the hydraulic retarder will raise transmission oil temperature and may cause damage to transmission.

a. Help slow your M911 Truck Tractor on curves and downgrade, by using the hydraulic retarder (2). Depress retarder pedal (2) located left of the service brake pedal to apply the retarder. You will get best retarding effect in the lower forward transmission gear ranges.

b. To prevent overheating transmission oil, fully release for short periods and reapply as necessary.



c. If transmission still overheats, notify Organizational Maintenance.

END OF PROCEDURE

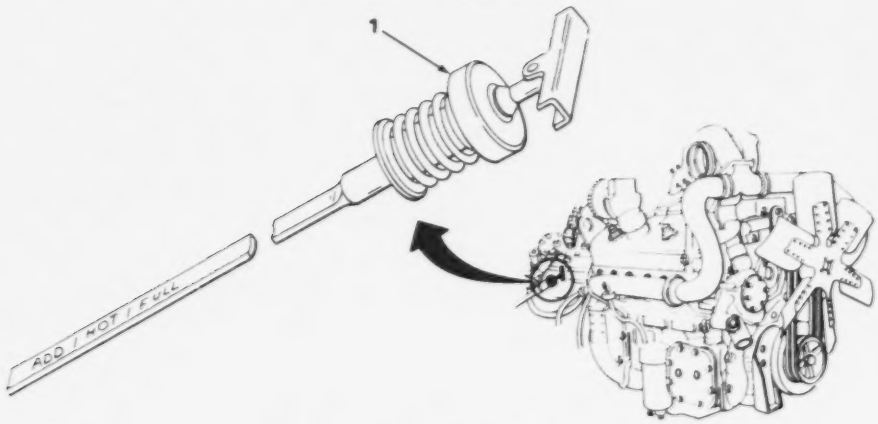
Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

SLOW OR ERRATIC AUTOMATIC SHIFTING

Step 1. Check transmission oil level on dipstick (1) with engine running and transmission at normal operating temperature of 160°-220°F (71°-104°C).

a. If oil level is low add proper grade of oil to raise level to full (see LO 9-2320-270-12).



b. If overfull, notify Organizational Maintenance.

c. If transmission continues to shift erratically, notify Organizational Maintenance.

END OF PROCEDURE

TA220917

Troubleshooting – Continued

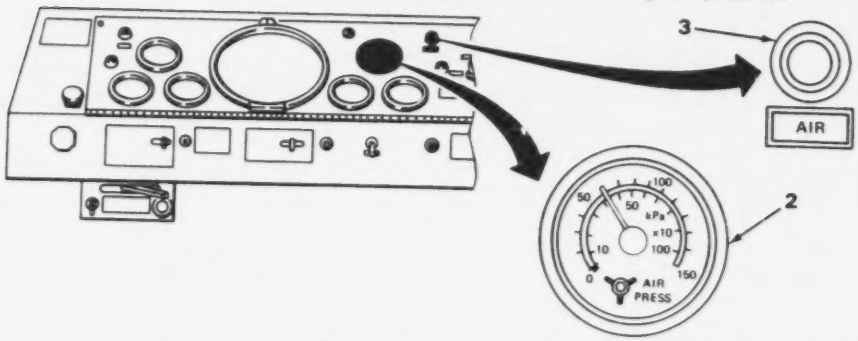
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

PUSHER AXLE

PUSHER AXLE WILL NOT COME UP

Step 1. Check amount of air pressure shown on AIR PRESS gage (2).

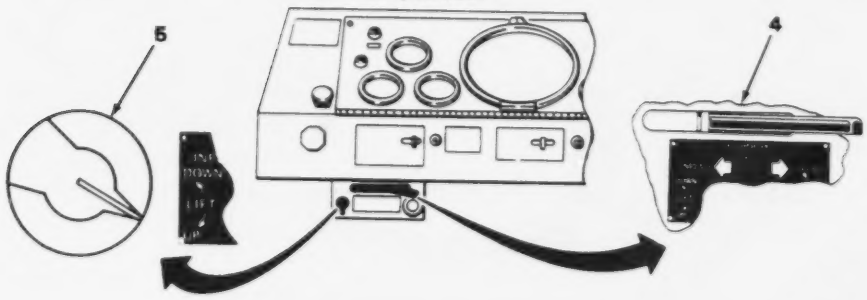
a. If air pressure is not at least 65 psi (448 kPa), wait until pressure builds. Low AIR pressure warning light (3) and buzzer should turn off when there is enough air pressure.



b. If air pressure does not build to 65 psi (448 kPa) go to LOW AIR PRESSURE (warning light and buzzer on) page 3-25.

Step 2. Check position of PUSHER AXLE air pressure load control (4) and raise/lower control (5).

a. Move PUSHER AXLE air pressure load control (4) fully to DEFLATE position and raise/lower control (5) fully to LIFT UP position.



b. If pusher axle still will not come up, notify Organizational Maintenance.

END OF PROCEDURE

TA220918

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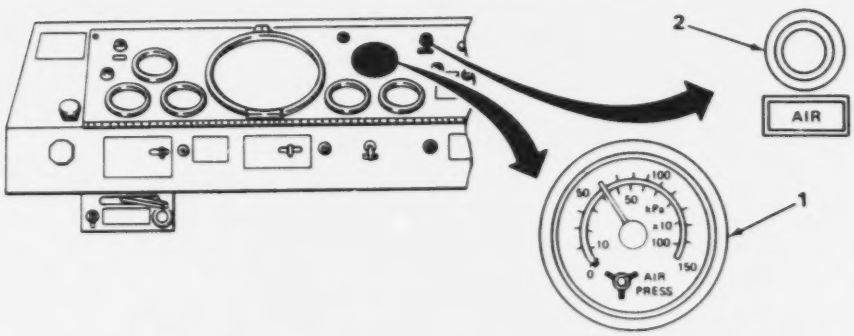
Troubleshooting – Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

PUSHER AXLE WILL NOT GO DOWN

Step 1. Check amount of air pressure shown on AIR PRESS gage (1).

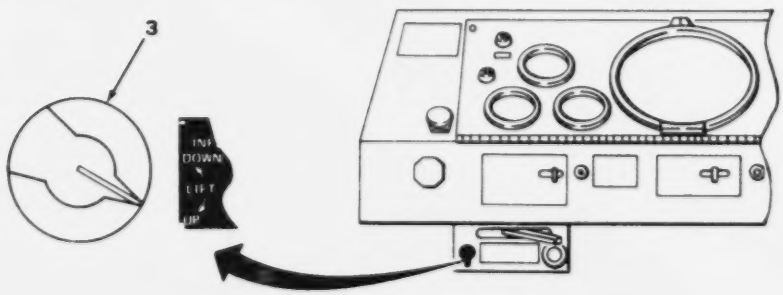
a. If air pressure is not at least 65 psi (448 kPa), wait until pressure builds. Low AIR pressure light (2) and buzzer should turn off when there is enough air pressure.



b. If air pressure does not build to 65 psi (448 kPa) go to low air pressure (warning light and buzzer on) page 3-24.

Step 2. Check position of raise/lower control (3).

a. Turn raise/lower control (3) fully to the LIFT DOWN position.



END OF PROCEDURE

TA220919

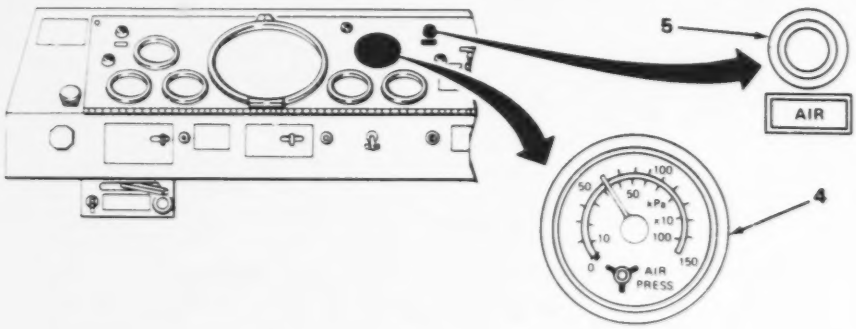
Troubleshooting – Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

PUSHER AXLE WILL NOT SUPPORT LOAD

Step 1. Check amount of air pressure shown on AIR PRESS gage (4).

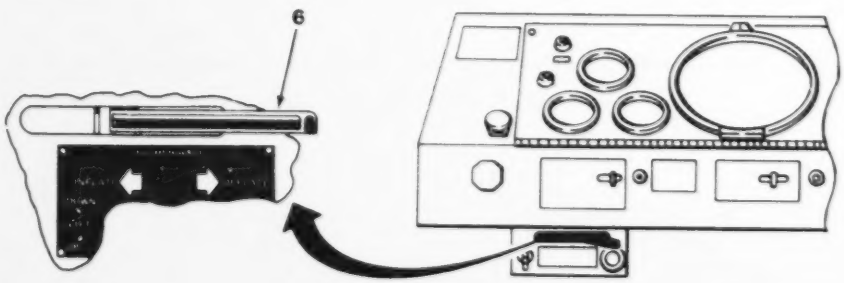
a. If air pressure is not at least 65 psi (448 kPa), allow air pressure to build. Low AIR pressure warning light (5) and buzzer should turn off when there is enough air pressure.



b. If air pressure does not build to 65 psi (448 kPa) go to LOW AIR PRESSURE (warning light and buzzer on) page 3-25.

Step 2. Check position of air pressure PUSHER AXLE load control (6).

a. Move load control (6) fully to INFLATE position.



b. If pusher axle still will not support load, notify Organizational Maintenance.

END OF PROCEDURE

TA220920

Troubleshooting – Continued

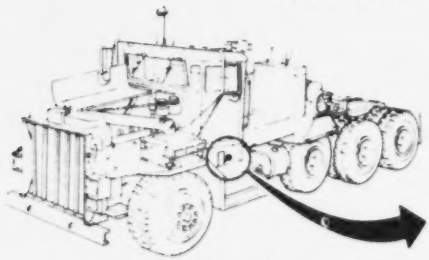
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

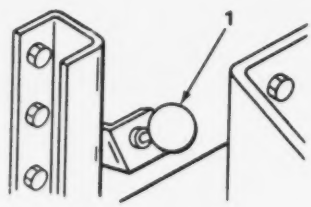
AIR SYSTEM AND BRAKES

LOW AIR PRESSURE (Warning light and buzzer on)

Step 1. Check position of air reservoir drain knob (1) under left cab door.

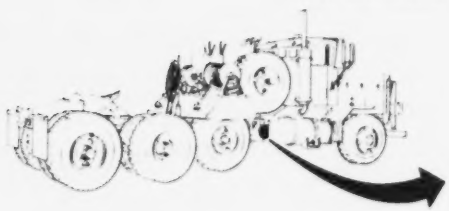
Push knob (1) in as far as possible.

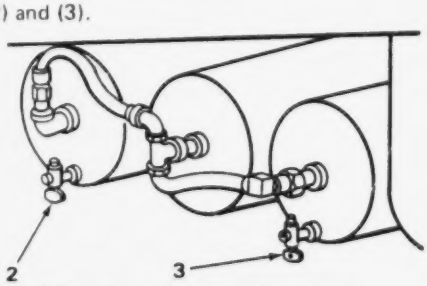




Step 2. Check position of air reservoir drain cocks (2) and (3).

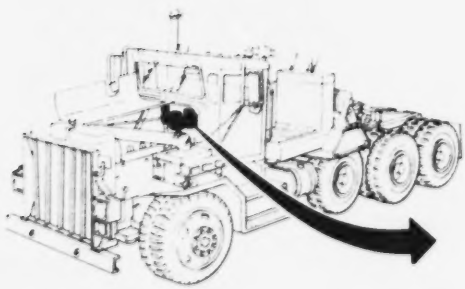
Close draincocks (2) and (3).

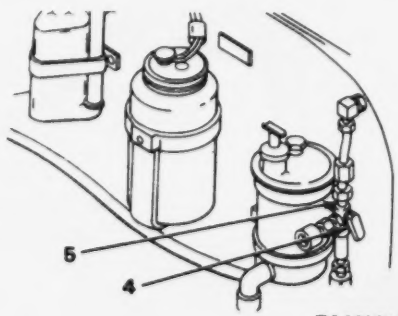




Step 3. Check position of air supply lever (4) on tire inflation valve (5).

Place air supply lever (4) in down position to shut off.





TA220921

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

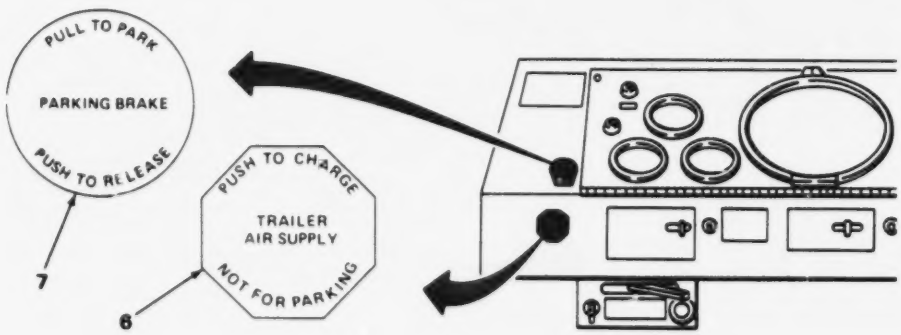
LOW AIR PRESSURE (Warning light and buzzer on) – CONTINUED

Step 4. Check position of TRAILER AIR SUPPLY control (6) and parking brake control (7).

If M911 Truck Tractor is not coupled to semitrailer, pull TRAILER AIR SUPPLY control (6) and parking brake control (7) out.

Step 5. If air pressure builds in the Tractor and Tractor is connected to a semitrailer, push semitrailer air supply control (6) in.

Step 6. Push parking brake control (7) in.



TA220922

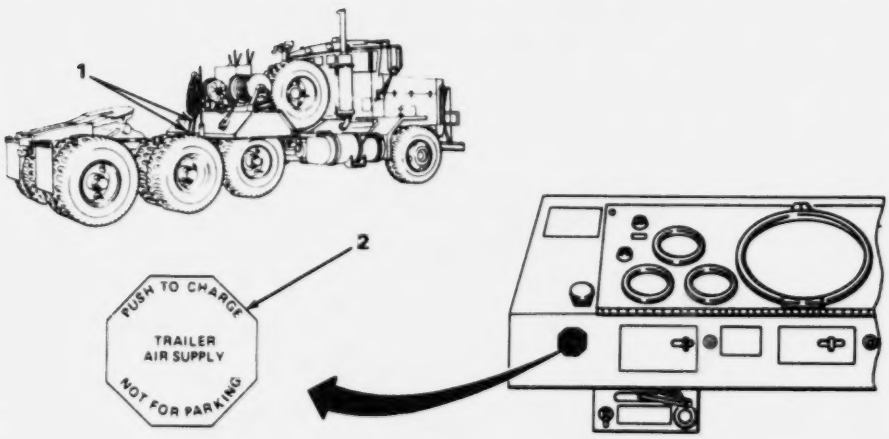
Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION

LOW AIR PRESSURE (Warning light and buzzer on) – CONTINUED

Step 7. Check tractor-to-trailer air line connections (1) if M911 Truck Tractor is coupled to semitrailer.

a. If tractor-to-trailer connections (1) are leaking, pull TRAILER AIR SUPPLY control (2) out, reconnect connections and push AIR SUPPLY control (2) in.



b. If tractor-to-trailer connections are still leaking, notify Organizational Maintenance.

Step 8. Do semitrailer troubleshooting if M911 Truck Tractor is coupled to semitrailer.

If air pressure is still low, notify Organizational Maintenance.

END OF PROCEDURE

TA220923

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

AIR PRESSURE LOSS DURING OPERATION

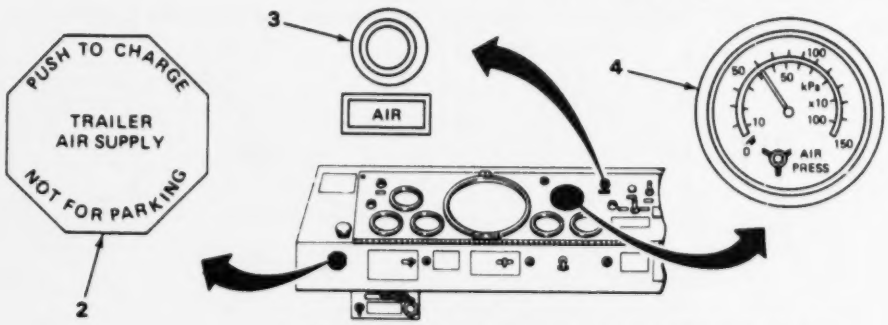
Step 1. Pull TRAILER AIR SUPPLY control (2) out.

a. Operate engine until warning light (3) and buzzer go off.

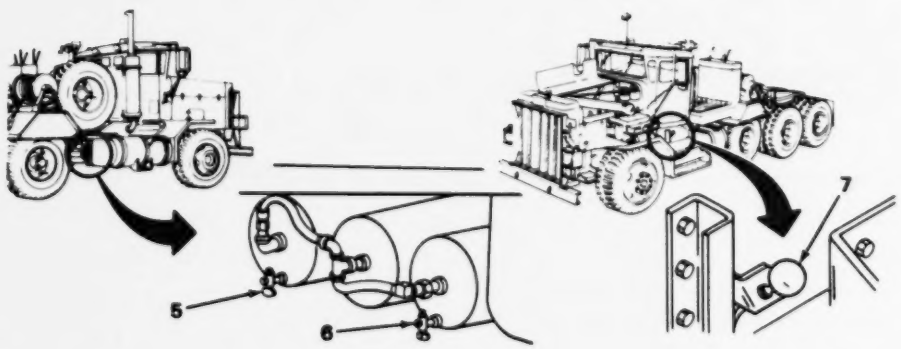
b. Stop engine.

c. Note AIR PRESSure gage (4) reading.

d. Fully depress and hold service brake pedal for 2 minutes.



e. If pressure loss is more than 5 psi (34 kPa) in 2 minutes, check air reservoir drains (5), (6), and (7) for damage or leaking by shutting off engine and listening for the hissing of escaping air.



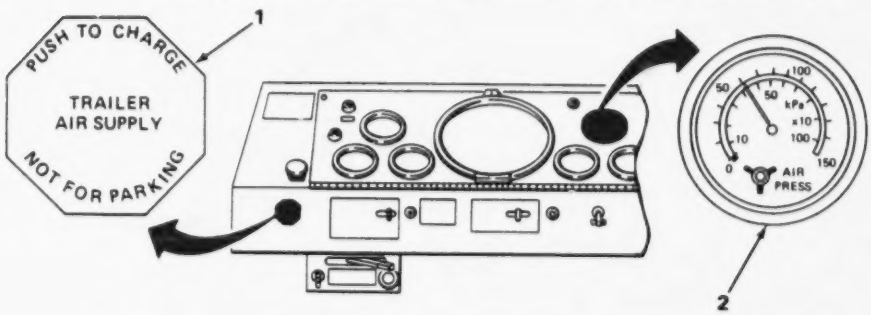
TA220924

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
AIR PRESSURE LOSS DURING OPERATION – CONTINUED

f. If reservoir drains are damaged or leaking, notify Organizational Maintenance.

g. If pressure loss is still more than 5 psi (34 kPa), notify Organizational Maintenance.

Step 2. Push in TRAILER AIR SUPPLY control (1) and note AIR PRESS gage (2) reading, and fully depress and hold service brake pedal for 2 minutes.



a. If pressure loss is more than 5 psi (34 kPa) after 2 minutes, troubleshoot the semitrailer air system (see TM 9-2330-294-14).

END OF PROCEDURE

TA220925

Troubleshooting – Continued

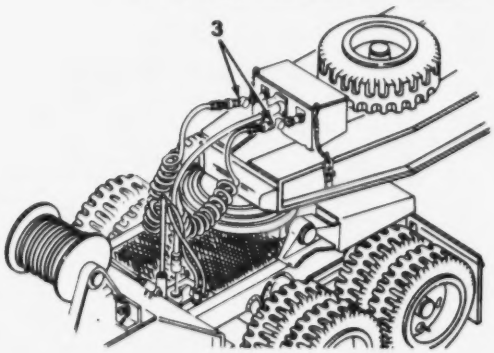
MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

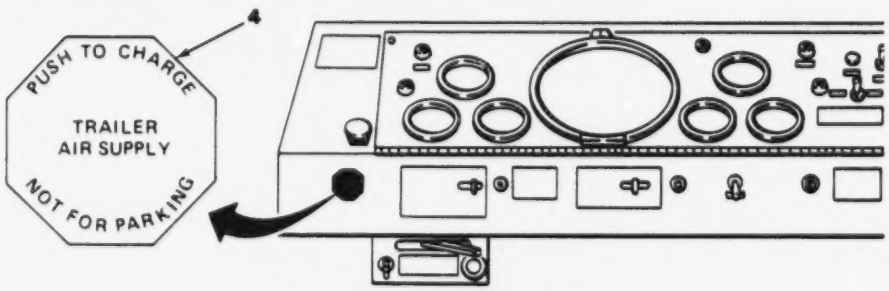
SEMITRAILER BRAKES WILL NOT APPLY

Step 1. Check tractor-to-trailer air hose connections (3).

a. If connections (3) are leaking, pull TRAILER AIR SUPPLY control (4) out, disconnect gladhands and reconnect properly. Push TRAILER AIR SUPPLY control (4) in to recharge the system.

b. If tractor-to-trailer air hose connections (3) are still leaking, notify Organizational Maintenance.





c. If semitrailer brakes still will not apply when air pressure is above 60 psi (414 kPa), troubleshoot semitrailer.

END OF PROCEDURE

TA220926

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

SEMITRAILER BRAKES WILL NOT RELEASE

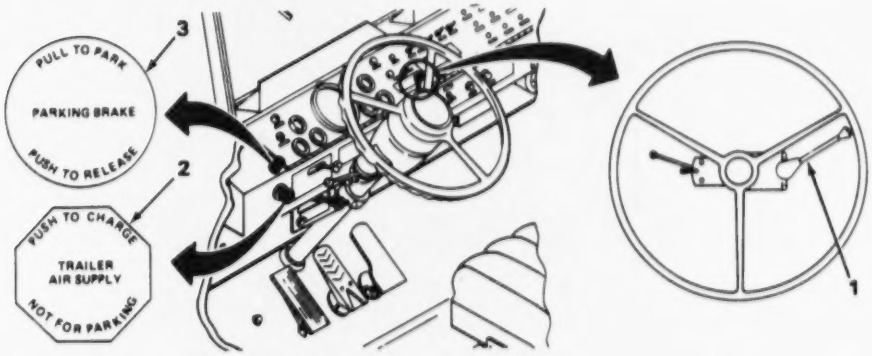
Step 1. Check position of semitrailer hand brake control (1).

Place semitrailer hand brake control (1) in OFF position.

Step 2. Check position of TRAILER AIR SUPPLY control (2).

Push TRAILER AIR SUPPLY control (2) in.

Step 3. Push in PARKING BRAKE control (3) to allow charging of semitrailer air supply.



TA220927

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

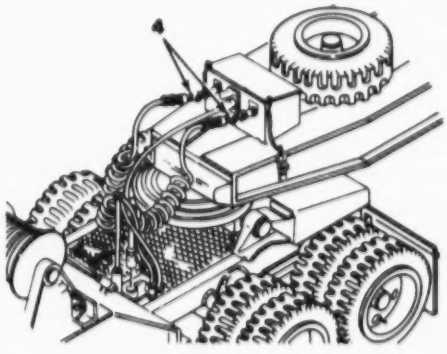
SEMITRAILER BRAKES WILL NOT RELEASE – CONTINUED

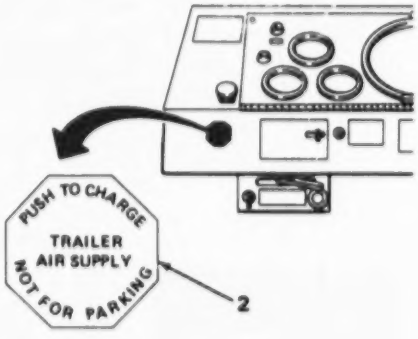
Step 4. Check tractor-to-trailer air hose connections (4).

a. Make sure that tractor and semitrailer hoses are connected correctly; SERVICE hose to SERVICE coupling, EMERGENCY hose to EMERGENCY coupling.

b. If connections (4) are leaking, pull TRAILER AIR SUPPLY control (2) out, disconnect glad hands and reconnect properly. Push TRAILER AIR SUPPLY control (2) in to charge the semitrailer air system.

c. If air hose connections are still leaking, notify Organizational Maintenance.





d. If semitrailer brakes still do not release troubleshoot semitrailer.

END OF PROCEDURE

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION

DRIVELINE LOCKING SYSTEM

DRIVELINE DOES NOT DISENGAGE (Indicator light stays on)

Step 1. Check position of DIFFERENTIAL LOCK/UNLOCK control (1).

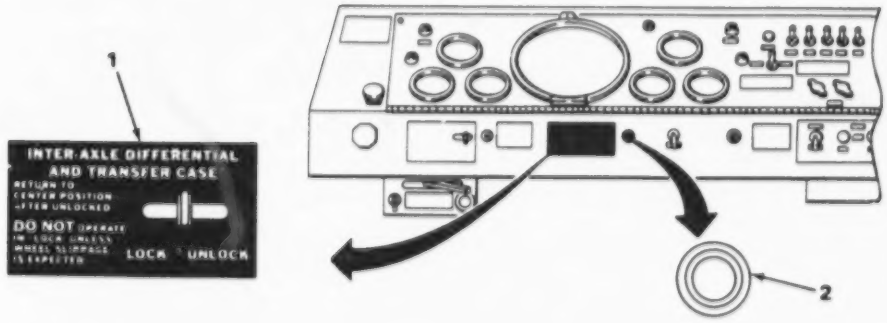
a. Move control (1) to UNLOCK position and wait for indicator light (2) to go off.

b. If light (2) goes off, the system has disengaged. Move LOCK/UNLOCK control (1) to center position.

Step 2. If light does not go off, back up slowly to get rid of possible driveline windup.

a. If indicator light (2) goes off, system is disengaged. Move LOCK/UNLOCK control to center position.

b. If indicator light (2) stays on, notify Organizational Maintenance.



END OF PROCEDURE

TA220929

Troubleshooting -- Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

WHEELS, TIRES, AND HUBS

WHEEL WOBBLES

Step 1. Check for loose lug nuts (3), missing lugs (4) and lug nuts (3), and broken lugs (4).

a. If lug nuts (3) are loose, tighten in order shown to insure wheel (5) is centered on hub (6).

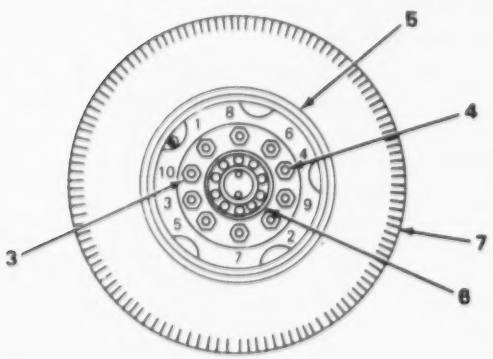
b. If lug nuts (3) are missing, replace.

c. If lugs (4) are broken or missing, notify Organizational Maintenance.

Step 2. Check for bent wheel (5).

a. If wheel is bent, remove tire and wheel assembly (7) and install spare in its place. See page 3-57. Notify Organizational Maintenance of bent wheel (5).

b. If replaced wheel (5) still wobbles, notify Organizational Maintenance.



END OF PROCEDURE

TA220930

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

M911 TRUCK TRACTOR WANDERS OR PULLS TO ONE SIDE (on level ground)

Step 1. Check tire air pressure.

When cool, inflate tires to 95 psi (650 kPa) front and pusher axle and 85 psi (580 kPa) tandem axles.

Step 2. Check tires for proper size and type.

a. If one tire is not 14 inch x 24 inch (35.56 cm x 60.90 cm) J/18 load capacity. Replace it with spare wheel and tire assembly. Notify Organizational Maintenance.

b. If more than one tire is not correct size, notify Organizational Maintenance.

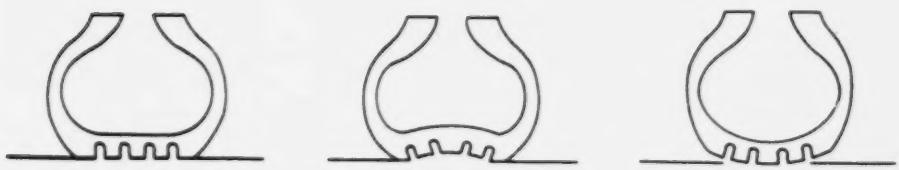
c. If M911 Truck Tractor still wanders, notify Organizational Maintenance.

END OF PROCEDURE

EXCESSIVE OR UNEVEN TIRE WEAR

Step 1. Check tire air pressure.

When cool, inflate or deflate tires to 95 psi (650 kPa) front and pusher axle, and 85 psi (580 kPa) tandem axles.



PROPER INFLATION | UNDER INFLATION | OVER INFLATION

TA220931

Troubleshooting – Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

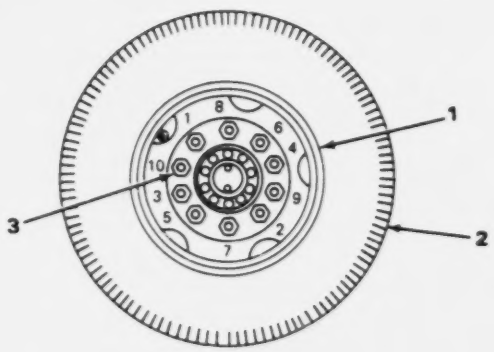
EXCESSIVE OR UNEVEN TIRE WEAR – CONTINUED

Step 2. Inspect for bent wheel (1).

If wheel (1) is bent, replace wheel and tire assembly (2) with spare. Notify Organizational Maintenance.

Step 3. Check for loose wheel (1).

a. If wheel (1) is loose, tighten lug nuts (3).



b. If reason for tire wear has not been found, notify Organizational Maintenance.

END OF PROCEDURE

STEERING

SHIMMIES OR WANDERS

Step 1. Check tire air pressure.

Inflate or deflate tires when cool to 95 psi (650 kPa) front and pusher axles, and 85 psi (580 kPa) tandem axles.

TA220932

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

SHIMMY OR WANDER – CONTINUED

Step 2. Check for unevenly or badly worn tires (1).

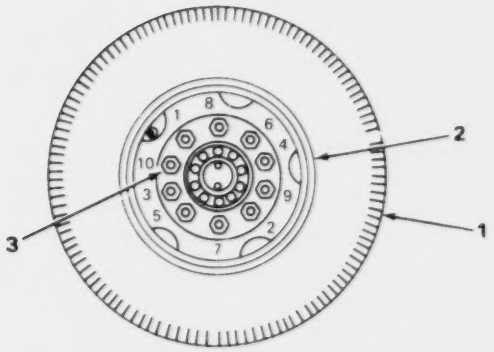
a. If tires are unevenly or badly worn, check for bent or loose wheel (2).

b. If wheel (2) is bent, replace with spare and notify Organizational Maintenance.

c. If wheel (2) is loose, tighten lug nuts (3).

d. If tires are unevenly or badly worn and wheel (2) is not bent or loose, notify Organizational Maintenance.

e. If reason for tire wear has not been found, notify Organizational Maintenance.



END OF PROCEDURE

TA220933

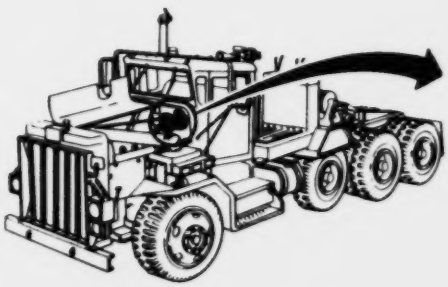
Troubleshooting – Continued

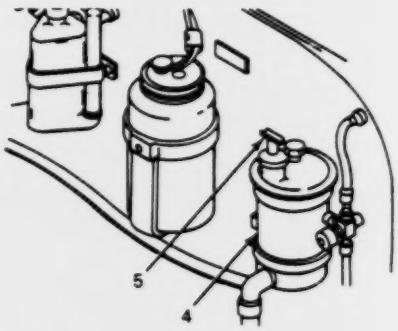
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

TRUCK IS HARD TO STEER

Step 1. Check power steering fluid level in power steering reservoir (4).

If fluid level is not at the FULL mark on dipstick (5), fill reservoir (4) (see LO 9-2320-270-12).





Step 2. Check front tire air pressure.

a. If front tire is not 95 psi (650 kPa), inflate or deflate to proper pressure.

b. If hard steering continues, notify Organizational Maintenance.

END OF PROCEDURE

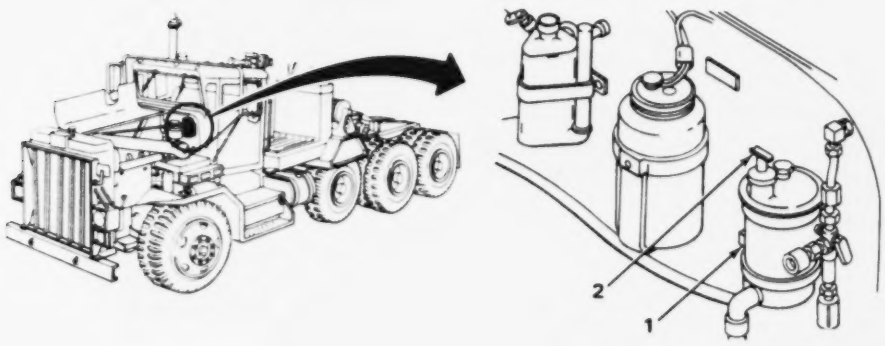
TA220934

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

STEERING SLOW TO RESPOND OR IS INTERMITTENT

Step 1. Check power steering fluid level in power steering reservoir (1).

If power steering fluid is not at FULL mark on dipstick (2), fill reservoir (see LO 9-2320-270-12).



Step 2. Turn steering wheel full left and full right and hold against stops for several seconds while truck is not moving. Repeat several times.

If slow response or intermittent steering continues, notify Organizational Maintenance.

END OF PROCEDURE

TA220935

Troubleshooting – Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

WINCHES

ONE OR BOTH WINCHES WILL NOT OPERATE

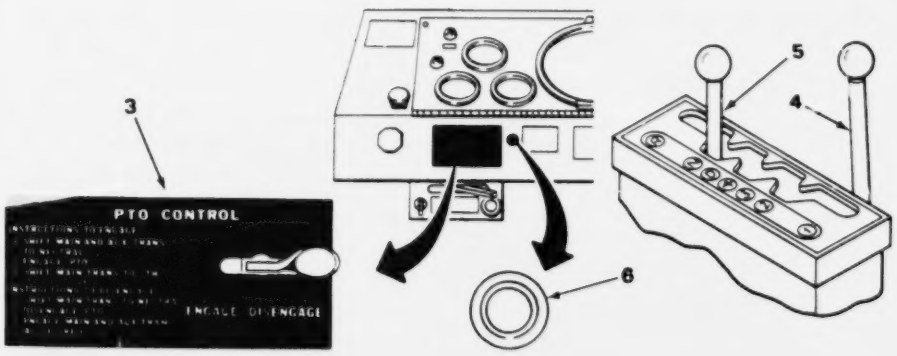
Step 1. Check position of PTO CONTROL (3), auxiliary transmission selector lever (4), and main transmission selector lever (5).

a. Place PTO CONTROL (3) in ENGAGE position while auxiliary and main transmission selector levers (4) and (5) are in neutral (N).

b. Place main transmission selector lever (5) in D position. Leave auxiliary transmission selector lever (4) in neutral.

Step 2. Check PTO/AUX THROTTLE INDICATOR LIGHT (6).

If PTO/AUX THROTTLE INDICATOR LIGHT (6) does not come on, notify Organizational Maintenance.



TA220936

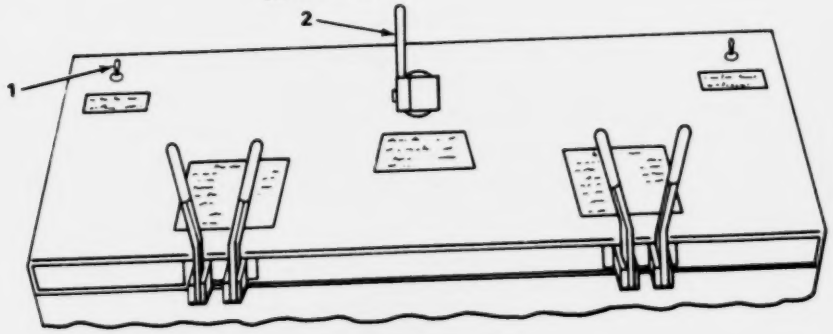
MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

ONE OR BOTH WINCHES WILL NOT OPERATE – CONTINUED

Step 3. Check position of the throttle release safety switch (1) and engine throttle control (2).

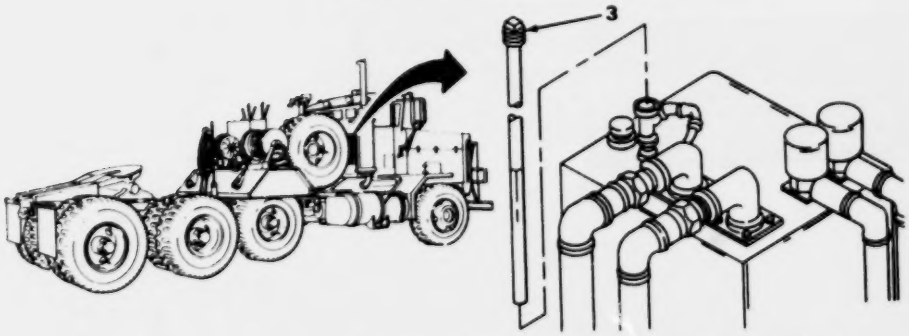
a. Move throttle release safety switch (1) rearward to ON position.

b. Pull engine throttle control (2) as far back as it will go (toward cab).



Step 4. Check hydraulic reservoir fluid level.

a. If hydraulic reservoir fluid level is not at the FULL mark on dipstick (3), fill reservoir (see LO 9-2320-270-12).



b. If winches still do not operate, notify Organizational Maintenance.

TA220937

Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

WINCH UNUSUALLY NOISY WHEN OPERATING

Step 1. Check cable for twists, tangles, and binding.

a. If cable is twisted, tangled or binding, pay out or take up cable as necessary to straighten twists, tangles or binding.

b. If trouble is not found, notify Organizational Maintenance.

END OF PROCEDURE

PTO

PTO WILL NOT ENGAGE

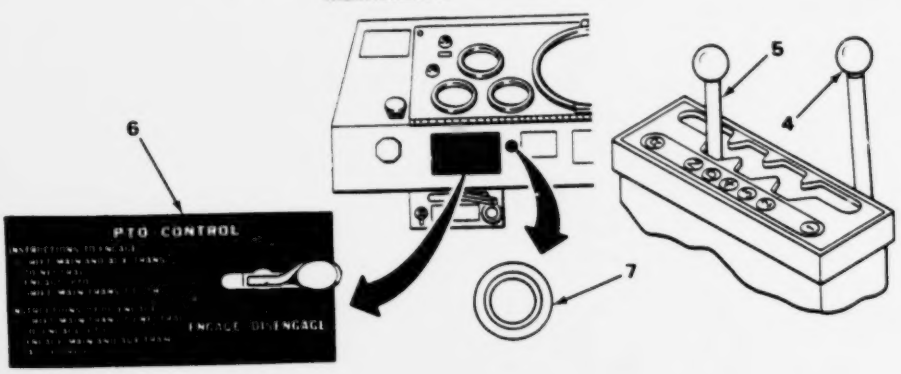
Step 1. Check PTO CONTROL position.

a. Move auxiliary and main transmission selector levers (4) and (5) to neutral (N).

b. Move PTO CONTROL (6) to ENGAGE position.

c. Move main transmission selector lever (5) to D position. When PTO AUX/THROTTLE INDICATOR LIGHT (7) comes on, PTO is engaged.

d. If PTO still is not engaged, notify Organizational Maintenance.



END OF PROCEDURE

TA220938

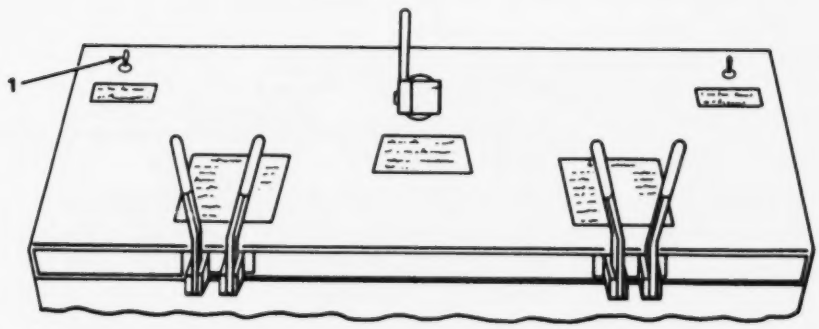
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

PTO/AUXILIARY THROTTLE INDICATOR LIGHT STAYS ON (PTO control in disengage position)

Step 1. Check position of throttle release safety switch (1) at winch control panel.

a. Move throttle release safety switch (1) to OFF position.

b. If indicator light still does not go off, notify Organizational Maintenance.



END OF PROCEDURE

TA220939

Section III. MAINTENANCE PROCEDURES

GENERAL

This section contains maintenance procedures authorized to be performed by the M911 Truck Tractor operator and crew. Use maintenance procedures along with lubrication instructions, preventive maintenance checks and services, and troubleshooting procedures to help keep the M911 Truck Tractor operational. The following maintenance procedures are covered in this section:

	Page		Page
Air Reservoir	3-72	Cleaning M911 Truck Tractor	3-44
Batteries	3-69	Cooling System	3-51
Changing Tire and Wheel Assembly	3-57	Filling Fuel Tanks	3-47

The maintenance procedures are written in four column format. Explanation of the columns follows:

Location column identifies, if necessary, the part of the vehicle that the maintenance step will be performed.

Item column indicates the first thing you will touch, and that to which the action is being done during that step.

Action column tells what to do with the item in the item column.

Remarks column gives additional information to help do the action in the action column.

CLEANING M911 TRUCK TRACTOR

This task covers:
a. External cleaning (page 3-44)
b. Interior cleaning (page 3-46)

INITIAL SETUP

Materials/Parts

CLP Lubricant (item 8, Appendix D)
Water supply
GGP Grease (item 7, Appendix D)
Mild Soap (Item 2, Appendix D)

Materials/Parts – Continued

Soft cloth (Rag)
Stick of wood

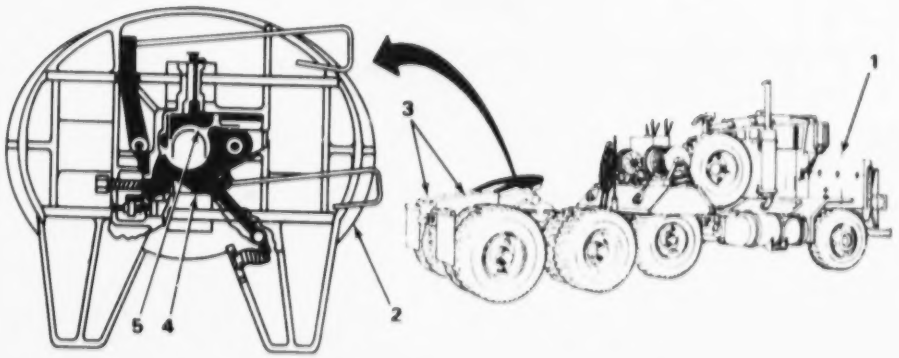
Personnel

One

LOCATION	ITEM	ACTION / REMARKS
EXTERNAL CLEANING		
		CAUTION To prevent scratching surfaces, never wipe off dirt when M911 Truck Tractor is dry. Never wash M911 Truck Tractor in direct sunlight or if outside of vehicle is hot to touch. Life of painted surface will be shortened. Do not use abrasives to remove mud and dirt from M911 Truck Tractor to keep from scratching or removing surface paint and allowing corrosion.
1 M911 Truck Tractor (1)	Fifth wheel (2)	Scrape off excess grease. **Use putty knife.**
2	M911 Truck Tractor (1)	a. Wash with cold or warm water and soft cloth. **Do not use hot water or strong detergent.**

CLEANING M911 TRUCK TRACTOR – CONTINUED

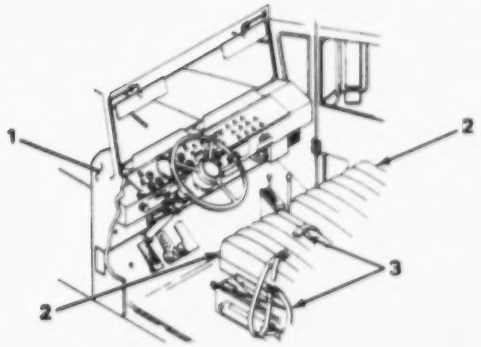
LOCATION	ITEM	ACTION / REMARKS
EXTERNAL CLEANING – CONTINUED		
		b. Inspect for bare metal, rust, corrosion, and other exterior damage while washing. **If bare metal other than fifth wheel (2) and ramps (3), or if rust, corrosion, or other damage is found, notify Organizational Maintenance.**
3	Top of fifth wheel (2) and ramps (3)	Coat with GGP grease.
4 Under side of fifth wheel (2)	Fifth wheel locking mechanism (4)	a. Spray with CLP lubricant. b. Coat surfaces (5) that contact trailer kingpin with thin coat of GGP grease.



TA220940

CLEANING M911 TRUCK TRACTOR – CONTINUED

LOCATION		ITEM	ACTION REMARKS
INTERIOR CLEANING			
			CAUTION Do not direct high pressure hose into cab or onto electrical components.
5	Truck cab (1)	All interior components	Remove loose dust and dirt.
6		Upholstery (2) and seat belts (3)	a. Clean with mild soap and water solution. **Do not use solvents or abrasives.** b. Wipe dry.



TASK ENDS HERE

TA220941

FILLING FUEL TANKS

This task covers:
Filling fuel tanks

INITIAL SETUP

Materials/Parts
Cloth (Rag)
Diesel fuel oil (item 11, Appendix D)

Personnel
Two

LOCATION	ITEM	ACTION	REMARKS

FILLING FUEL TANKS

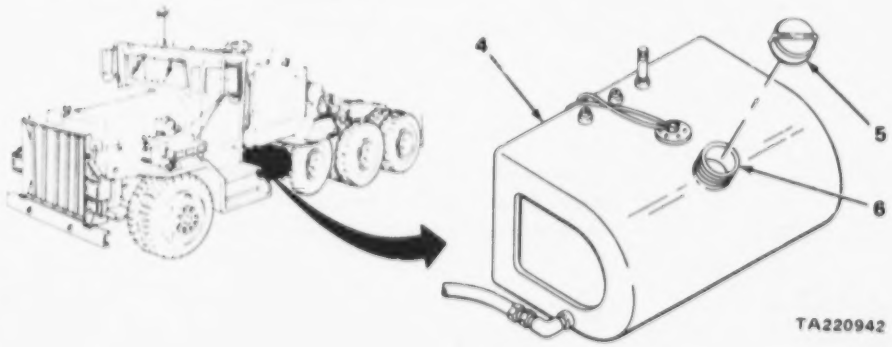
WARNING

Fuel is extremely flammable. Do not smoke or allow open flame nearby when filling the fuel tanks. Failure to observe safety instructions could cause serious injury to personnel and damage to equipment.

NOTE

Left and right fuel tanks are filled the same way. Only the left fuel tanks is illustrated below.

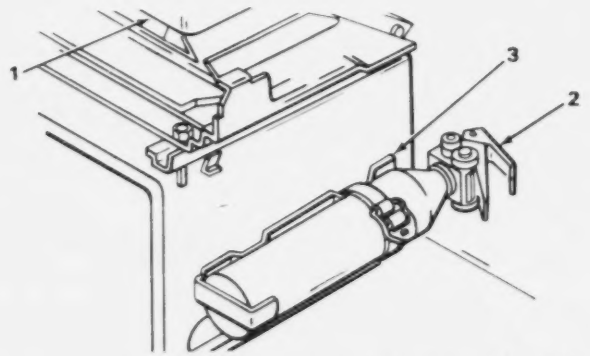
1		Engine	Shutdown.
2	Left and right fuel tanks (4)	Filler caps (5) and tank openings (6)	Wipe off dirt.



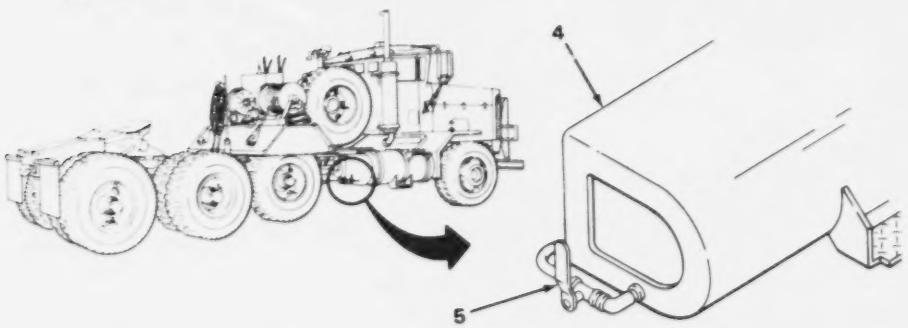
TA220942

FILLING FUEL TANKS – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
FILLING FUEL TANKS – CONTINUED		
3 Left of operator's seat (1)	Fire extinguisher (2)	Take out of bracket (3).



4 Rear of right fuel tank (4)	Gate valve lever (5)	Close valve by raising lever up.



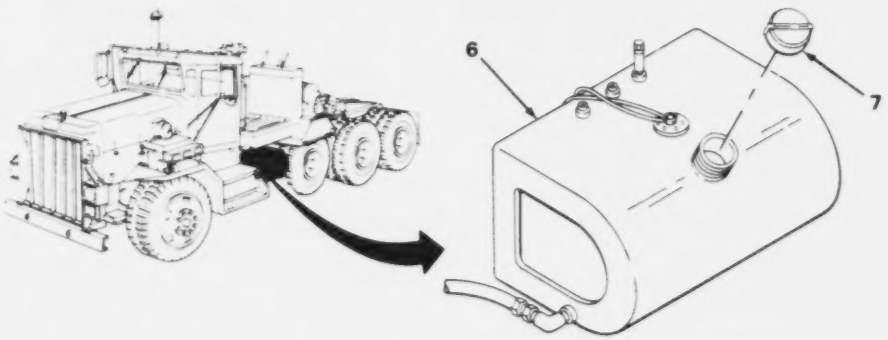
WARNING

Crew member will stand by with fire extinguisher while M911 Truck Tractor is being filled with fuel. Failure to do so could result in injury or damage to equipment.

TA220943

FILLING FUEL TANKS – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
FILLING FUEL TANKS – CONTINUED		
5 Left and right fuel tanks (6)	Filler caps (7)	Unscrew and take off just before filling each.



WARNING

Be sure that nozzle or container contacts fuel tank filler tube on fuel tank to carry off static electricity. Failure to ground nozzle may cause static spark that would ignite fuel and cause serious injury to personnel and damage to equipment.

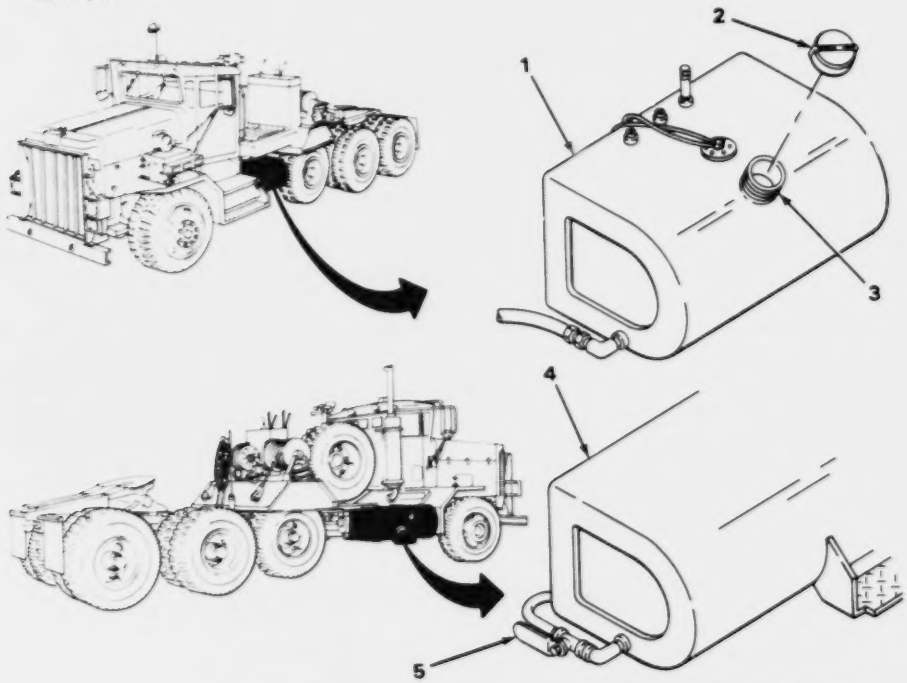
CAUTION

Be sure hose nozzle or fuel container is clean. Failure to have clean nozzle or fuel container could cause damage to engine.

TA220944

FILLING FUEL TANKS – CONTINUED

LOCATION	ITEM	ACTION REMARKS
FILLING FUEL TANKS – CONTINUED		
6	Left and right fuel tanks (1)	Fill with proper grade of fuel. **Fill only to about 2 inches (5 cm) below top of tanks (1) to allow expansion.**
7	Two filler caps (2)	Place on fuel tank filler (3) and secure.
8 Rear of right fuel tank (4)	Gate valve (5)	Open valve by pushing lever down.



FOLLOW-ON TASK: If truck tractor has been allowed to run out of fuel, the fuel system must be purged. Notify Organizational Maintenance.

TASK ENDS HERE

TA220945

COOLING SYSTEM

This task covers:

a. Draining (page 3-51)
b. Cleaning (page 3-54)
c. Filling (page 3-54)

INITIAL SETUP

Tools
Adjustable wrench

Materials/Parts
Catch container
Cloth (Rag)
Ethylene Glycol (antifreeze) (Item 1, Appendix D)

Materials/Parts – Continued
Coolant

Personnel
One

Reference
TM750-254

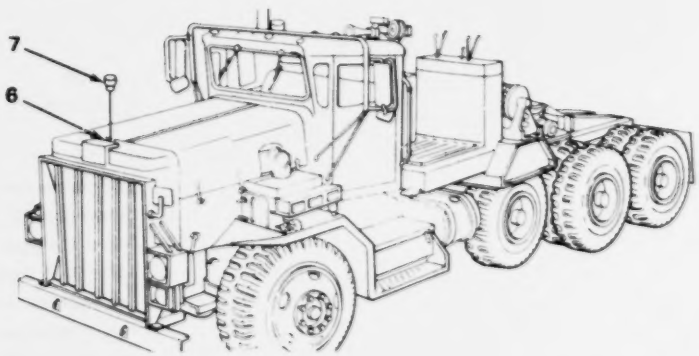
LOCATION	ITEM	ACTION	REMARKS

DRAINING

WARNING

Failure to remove hot radiator cap with cloth and in two steps (counterclockwise to first stop, let pressure release, and then remove) may result in serious burns to personnel.

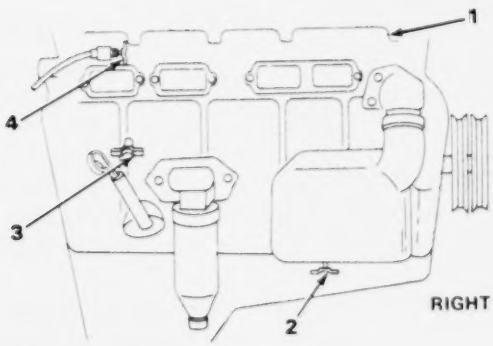
1	Radiator (6)	Radiator cap (7)	Remove.



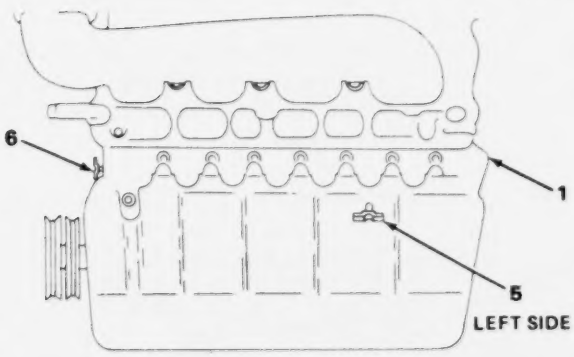
TA220946

COOLING SYSTEM – CONTINUED

	LOCATION	ITEM	ACTION	REMARKS
DRAINING – CONTINUED				
2	Right side of engine (1)	Three drain cocks (2, 3, and 4)	Open.	**Use containers to catch coolant.**



3	Left side of engine (1)	Two drain cocks (5 and 6)	Open.	**Use containers to catch coolant.**

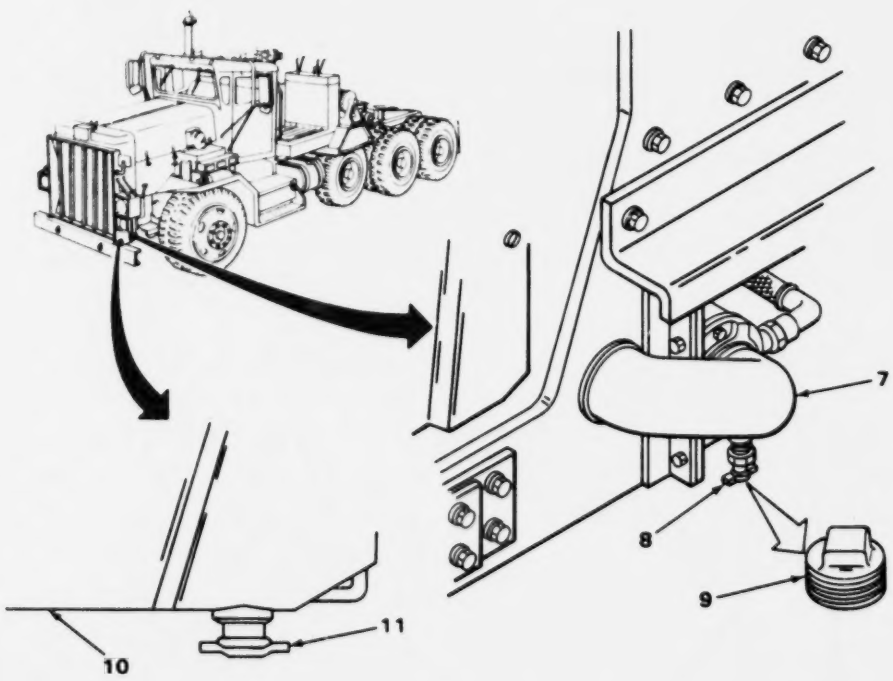


4	Left end of heat exchanger (7)	Drain cock (8)	Open.	**Some models have a pipe plug (9) instead of drain cock (8). Use 9/16 open end wrench to remove. Use container to catch coolant.**

TA220947

COOLING SYSTEM – CONTINUED

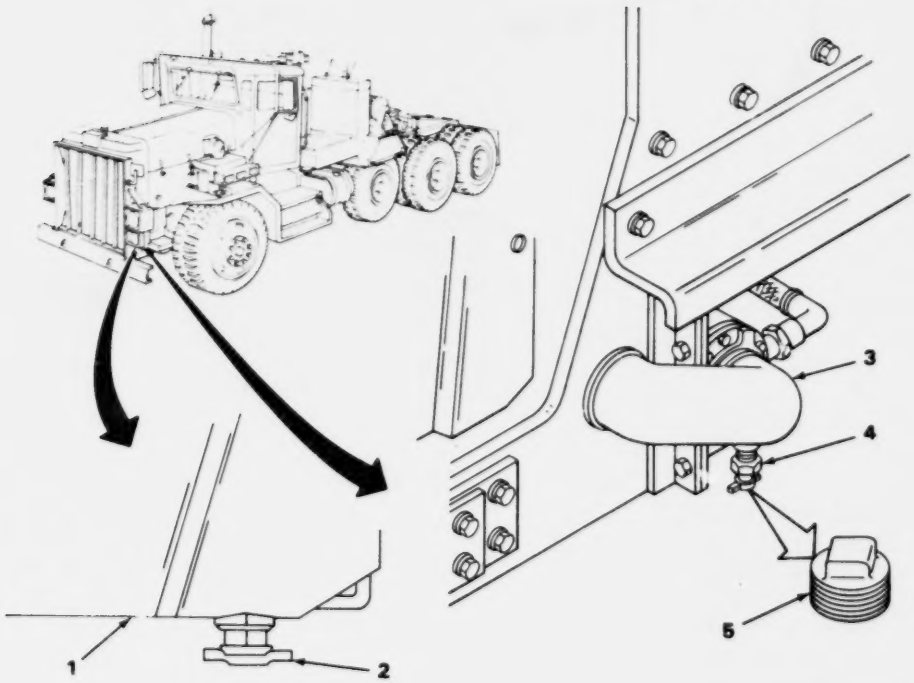
LOCATION	ITEM	ACTION	REMARKS
DRAINING – CONTINUED			
5 Bottom left side of radiator (10)	Drain cock (11)	Open.	**Use container to catch coolant.**
6	Cooling system	Let drain thoroughly.	



TA220948

COOLING SYSTEM – CONTINUED

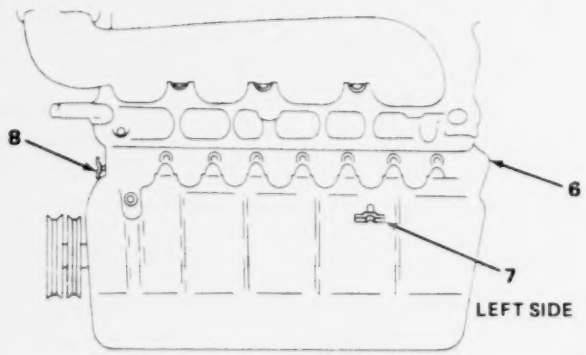
LOCATION	ITEM	ACTION	REMARKS
CLEANING			
7	Cooling system	Clean.	**See TM 750-254 for detailed cleaning instructions.**
FILLING			
8 Bottom left of radiator (1)	Draincock (2)	Close by turning clockwise.	
9 Left end of heat exchanger (3)	Draincock (4)	Close by turning clockwise.	**If pipe plug (5) instead of drain cock (4), install using 9/16 open end wrench.**

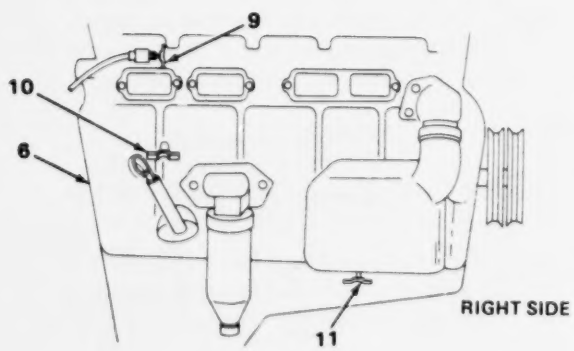


TA220949

COOLING SYSTEM – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
FILLING – CONTINUED		
10 Left side of engine (6)	Two drain cocks (7 and 8)	Close by turning clockwise.
11 Right side of engine (6)	Three drain cocks (9, 10, and 11)	Close by turning clockwise.

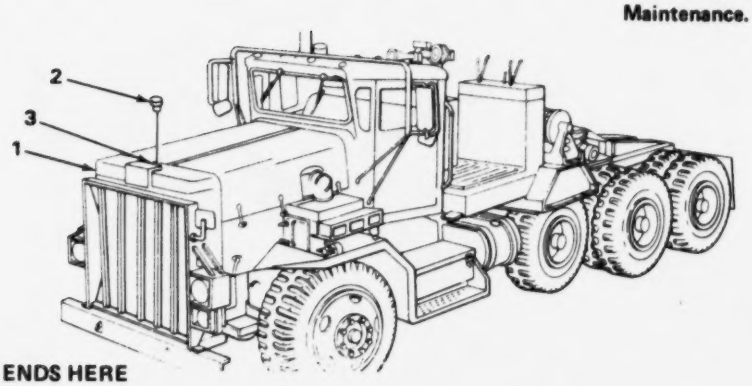




TA220950

COOLING SYSTEM – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
FILLING – CONTINUED		
12	Radiator (1)	Fill with coolant. **Use mixture of clean water and ethylene glycol base permanent antifreeze. See TM 750-254 for mixing instructions for your region.**
13	Engine	Start and allow to reach normal operating temperature of 160° – 185°F (71° – 85°C).
14	Radiator (1)	a. Check coolant level. b. Adjust level to approximately 2 inches (5 mm) below top of filler neck (3).
15	Radiator cap (2)	Install on radiator filler neck (3).
16	All drain cocks and plugs	Check for leaks. **If leaking, attempt to tighten. If still leaking, notify Organizational Maintenance.**



TASK ENDS HERE

TA220951

CHANGING A WHEEL AND TIRE ASSEMBLY

This task covers:

a. Lowering spare wheel and tire assembly with hoist (page 3-58)
b. Raising spare wheel and tire assembly with hoist (page 3-65)
c. Jacking (page 3-60)
d. Removing and installing wheel and tire (page 3-62)

INITIAL SETUP

Tools

Lug wrench
Lug nut wrench
Hydraulic jack and handle
Tire air gage

Materials/Parts

Hydraulic jack oil (if required)

Materials/Parts – Continued

Support board
Two support blocks

Personnel

Three

LOCATION	ITEM	ACTION / REMARKS

WARNING

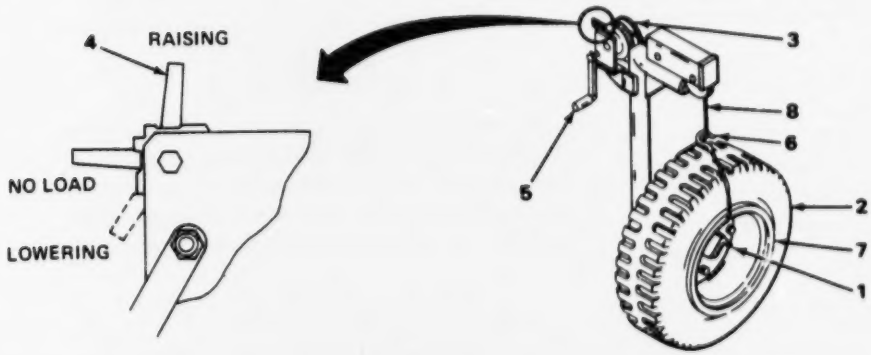
Do not release drum locking lever until you have a firm grip on hoist handle when there is a load on the cable. There is no braking mechanism on some drums for lowering load. A falling wheel and tire assembly may cause injury to personnel and damage to equipment.

NOTE

- Two crew members will guide wheel and tire assembly while third crew member operates hoist.
- Spare tire furnished with the M911 Truck Tractor will not fit pusher axle. If flat tire is on pusher axle, raise axle and notify Organizational Maintenance.
- As soon as possible have Organizational Maintenance torque lug nuts to proper limits.

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

	LOCATION	ITEM	ACTION / REMARKS
	LOWERING SPARE WHEEL AND TIRE ASSEMBLY WITH HOIST		
1	Hoist drum (1)	Locking lever (2)	Move to no load position (3). **Spare wheel and tire assembly still mounted on bracket (4).**
2		Crank (5)	Turn counterclockwise and pay out enough cable to wrap around tire (6).
3		Cable hook (7)	a. Push through wheel (8). b. Wrap around tire (6). c. Hook to upper portion of cable (9).
4		Crank (5)	Turn clockwise and take up slack.



5	Crank (5)	Locking lever (2)	Move fully backward to lowering position.

WARNING

Do not allow anyone to stand directly under wheel and tire assembly while it is on the hoist. A runaway hoist or falling wheel and tire assembly may cause serious injury to personnel.

TA220952

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

LOCATION	ITEM	ACTION / REMARKS

LOWERING SPARE WHEEL AND TIRE ASSEMBLY WITH HOIST – CONTINUED

NOTE

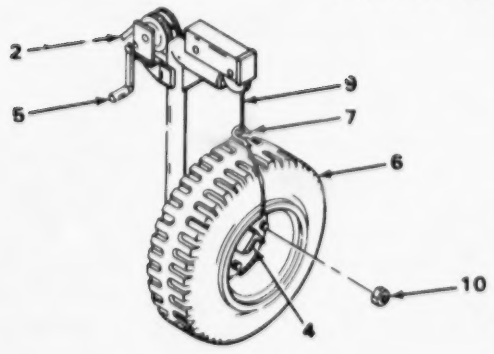
Direct one crew member to take off lug nuts (10) and second crew member to hold wheel and tire assembly (6) onto bracket (4) while you keep tension on crank (5).

6	Spare tire and wheel assembly (6) to bracket (4)	Four lug nuts (10)	Using lug wrench take-off.

NOTE

Direct crew members to stand on ground and guide wheel and tire assembly off of bracket (4) while you keep cable (9) tight.

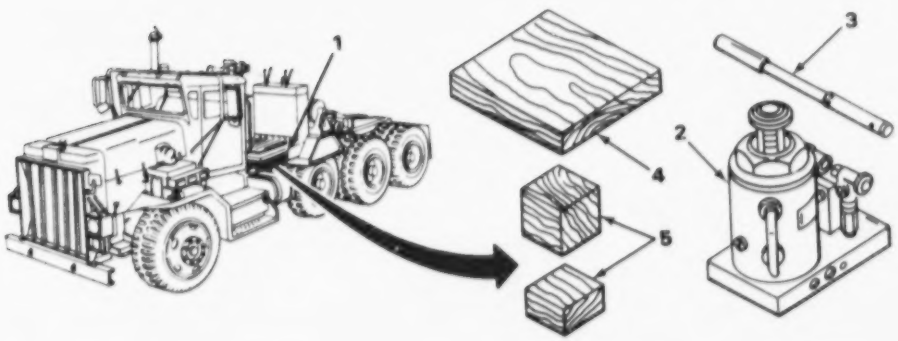
7		Crank (5)	a. Pay out cable (9) to work wheel and tire assembly (6) gradually off of bracket (4) b. Pay out cable (9) and lower wheel and tire assembly to ground. c. Keep tension on cable (9) until crew members have control of wheel and tire assembly (6).
8		Hook (7)	Disconnect and take cable (9) off of tire and wheel assembly (6).



TA220953

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

LOCATION	ITEM	ACTION	REMARKS
JACKING			
		WARNING	
		The hydraulic jack is intended only for lifting the truck, not for supporting the vehicle after it is raised. Do not get under the truck after it is raised unless it is properly supported with safety stands or blocks. Failure to observe this warning can result in serious injury.	
9 Storage box (1)	Hydraulic jack (2), jack handle (3), support board (4), and two support blocks (5)	Take out.	**If jacking rear axle, only support board (4) is needed. If jacking front axle, support board (4) and one or two support blocks (5) are needed.**

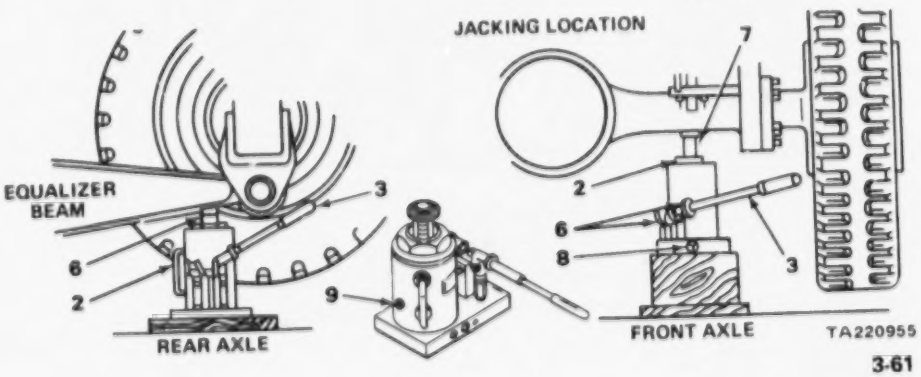


10	Jack (2)	a. With jack ram (6) all the way down, rotate both release valves (7) firmly clockwise with jack handle (3). b. Place on support board (4), and if enough space, on one or more support blocks (5) under axle to be raised.	

TA220954

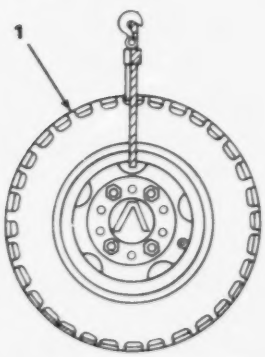
CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

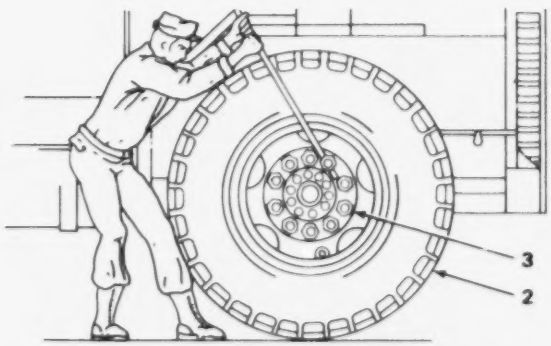
LOCATION	ITEM	ACTION / REMARKS
JACKING – CONTINUED		
		NOTE Rear axle jacking location is on equalizer beam. Front axle jacking location is on axle.
11	Jack handle (3)	a. Put in handle socket (6). b. Pump to raise jack ram (7) but do not raise tire.
		NOTE If jack ram (7) fails to rise to full height, do steps 12 through 15.
12	Jack ram (7)	Lower all the way down by rotating both release valves (8) approximately two turns counterclockwise.
13	Filler screw (9)	Carefully take out of side of jack (2).
14	Jack (2)	With jack on its side, fill completely with hydraulic jack OE/HDO only.
15	Filler screw (9)	Screw into side of jack (2). **Repeat steps 10 and 11.**



CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
REMOVING AND INSTALLING A WHEEL AND TIRE ASSEMBLY		
16	Spare wheel and tire assembly (1)	a. Check air pressure. **Front axle tires should have 95 psi (650 kPa). Rear axle tires should have 85 psi (580 kPa).**
		b. Have ready for installation.
17	Truck	Check to be sure it will not roll. **If necessary, chock tires.**
		NOTE On left side of truck turn nuts clockwise to loosen. On right side of truck turn nuts counterclockwise to loosen.
18 Wheel to be taken taken off (2)	Ten lug nuts (3)	Using lug nut wrench, loosen.





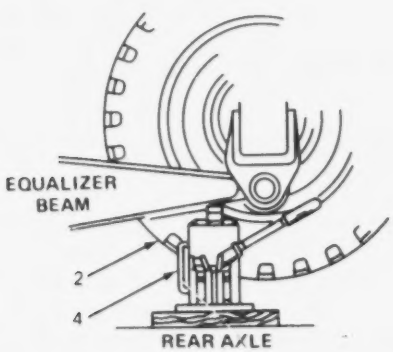
TA220956

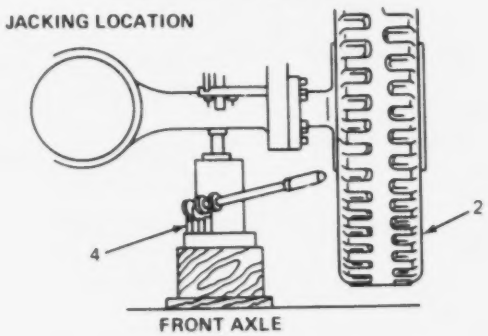
CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

LOCATION	ITEM	ACTION / REMARKS

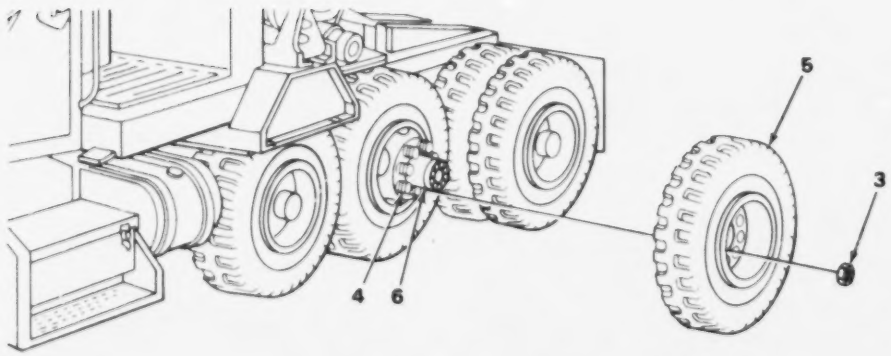
REMOVING AND INSTALLING A WHEEL AND TIRE ASSEMBLY – CONTINUED

19	Jack (4)	Raise until wheel and tire assembly (2) is off of ground.





20	Lug nuts (3)	Unscrew from lugs (4).
21	Wheel and tire assembly (5)	Take off of hub (6).



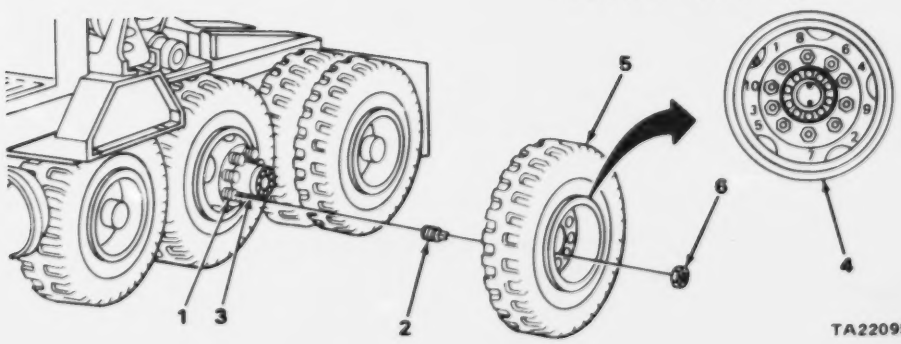
NOTE

If replacing front or outer dual wheel and tire assembly only, go to step 26.

TA220957

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

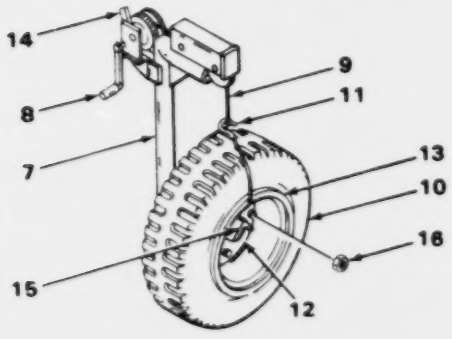
	LOCATION	ITEM	ACTION / REMARKS
REMOVING AND INSTALLING A WHEEL AND TIRE ASSEMBLY – CONTINUED			
22	Inner dual wheel and tire assembly (1)	Ten lugs (2)	Unscrew.
23		Inner dual wheel and tire assembly (1)	Take off of hub (3).
INSTALLATION			
24		Spare wheel and tire assembly (1)	Place on hub (3).
25		Ten lugs (2)	a. Screw into hub (3). b. Using lug wrench and extension, apply full body weight and tighten in the order illustrated (4).
26		Wheel and tire assembly (5)	Place on hub (3) and secure with ten lug nuts (6) in the order illustrated (4). **Do not final tighten lug nuts (6).**
27		Truck	Lower.
28		Ten lug nuts (6)	Using lug nut wrench and extension, apply full body weight and tighten in the order illustrated (9).



TA220958

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

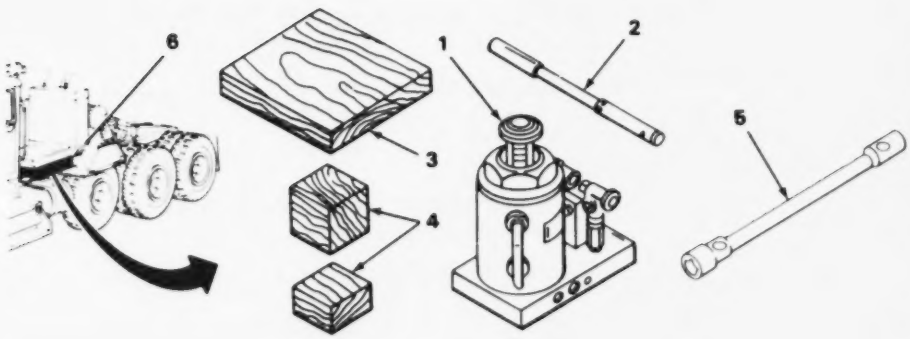
LOCATION	ITEM	ACTION / REMARKS
RAISING SPARE WHEEL AND TIRE ASSEMBLY		
29 Spare tire hoist (7)	Crank (8)	Pay out enough cable (9) allow crew member on ground to attach tire and wheel assembly (10).
30	Cable (9) and hook (11)	Put though one of five holes (12) in edge of wheel (13).
31	Hook (11)	Put over top of tire (10) and hook to cable (9).
32	Pulley locking lever (14)	Move upright to raising position.
	NOTE	
	Direct crew members to steady and guide tire and wheel assembly (10) while you raise it.	
	Double check locking lever (14) in upright position.	
33	Crank (8)	a. Rotate clockwise and raise onto mounting bracket (15). b. Take up slack and hold while crew member puts lug nuts (16) on.
34	Tire and wheel assembly (10)	Using lug wrench, secure to mounting bracket with four lug nuts (16).



TA220959

CHANGING A WHEEL AND TIRE ASSEMBLY – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
RAISING SPARE WHEEL AND TIRE ASSEMBLY – CONTINUED		
35	Hydraulic jack (1), jack handle (2), support board (3), two support blocks (4) and lug wrench (5)	Stow in storage compartment (6).



TASK ENDS HERE

TA220960

BATTERIES

This task covers:
Cleaning

INITIAL SETUP

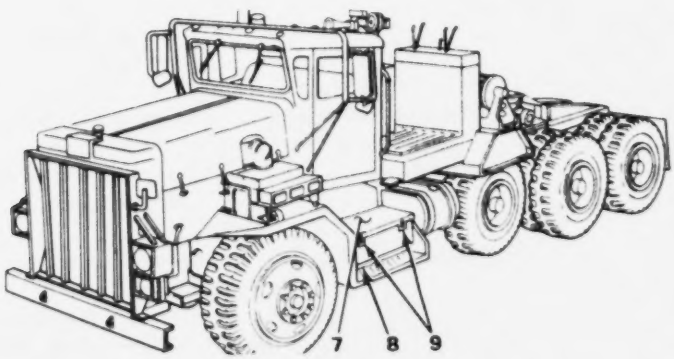
Tools
Wire Brush

Personnel
One

Materials/Parts
Distilled water (Item 3, Appendix D)
Soap (Item 2, Appendix D)

Reference
TM 9-6140-200-14

	LOCATION	ITEM	ACTION / REMARKS
1	Battery box cover (7) to battery box (8)	Two latches (9)	Unfasten.
2	Battery box (8)	Battery box cover (7)	Lift front and slide forward to take off.



TA220961

BATTERIES – CONTINUED

WARNING

Lead-acid battery gases can explode. Do not smoke, have open flames, or make sparks around a battery, especially if the caps are off. If a battery is gassing, it can explode and cause injury to you.

If acid contacts the eyes, skin, or clothing, flush immediately with large amounts of cold water. Also, in case of eye or skin contact, see a physician immediately.

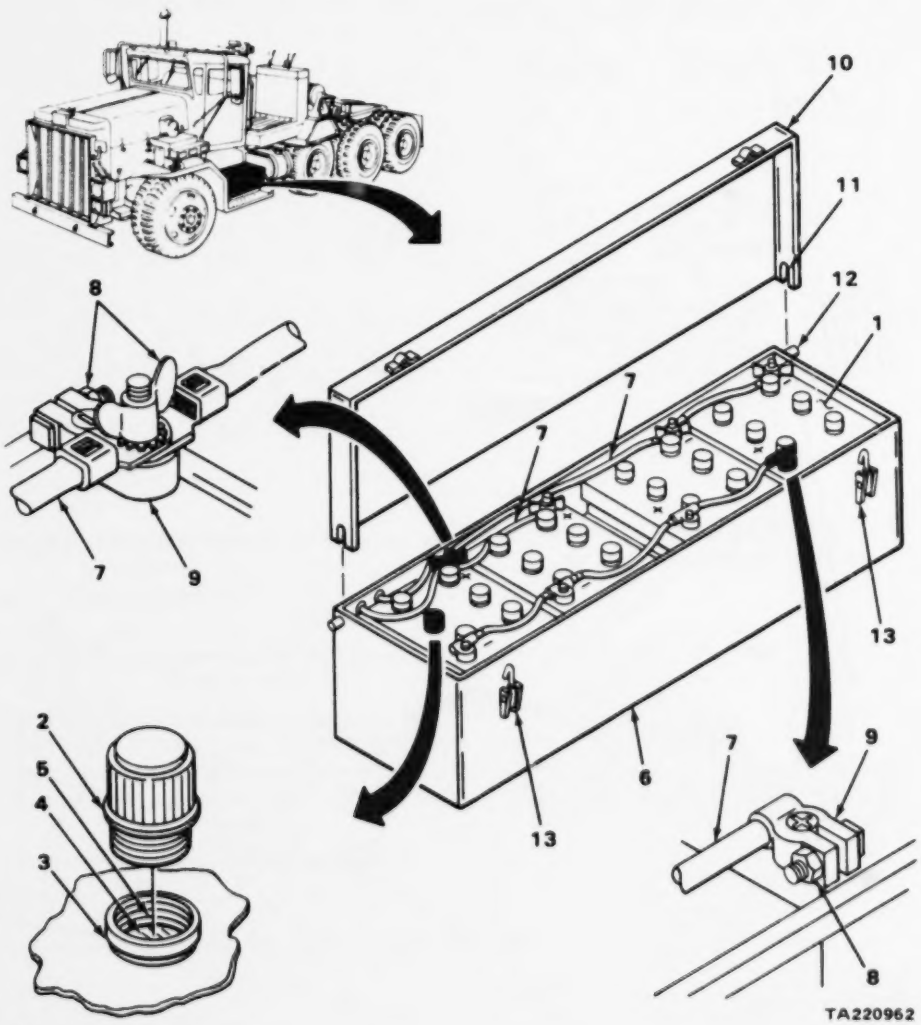
	LOCATION	ITEM	ACTION / REMARKS
3	Four batteries (1)	Twenty-four cell caps (2)	Takeoff.
4		Twenty-four cells (3)	a. Check electrolyte level in each. **Level should be above plates (4) and no higher than bottom of filler ring (5).** b. Add distilled water if necessary no higher than at bottom of ring (5). c. Put twenty-four caps (2) on hand tight.
5	Battery box (6)	All batteries (1), cables (7), nuts (8), and clamps (9)	a. Check condition and security of connections. b. Using wire brush clean with soap and water.
6		Four batteries (1)	Check cases for cracks and evidence of leaking. **If leaking or cracked notify Organizational Maintenance.**

CAUTION

If batteries are not connected in series parallel as illustrated, serious damage to the truck electrical system may result.

BATTERIES – CONTINUED

LOCATION	ITEM	ACTION / REMARKS
7	Battery box cover (10)	Place on battery box (6) and slide slots (11) onto cover pivots (12).
8 Battery box (6) to battery box cover (10)	Two latches (13)	Fasten.



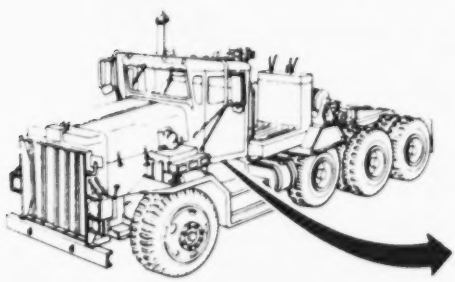
TA220962

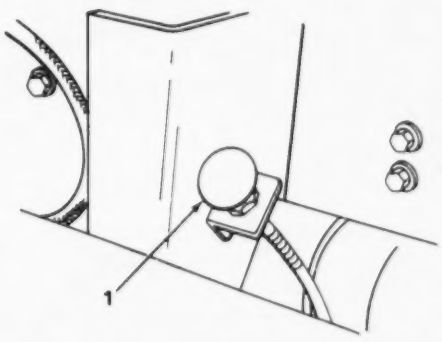
TASK ENDS HERE

AIR RESERVOIRS

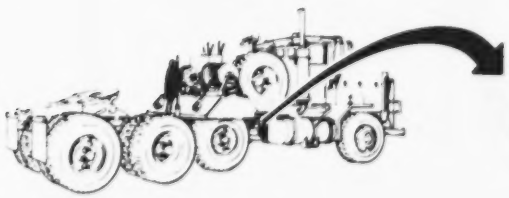
This task covers:
a. Draining air and moisture from air system (page 3-72)

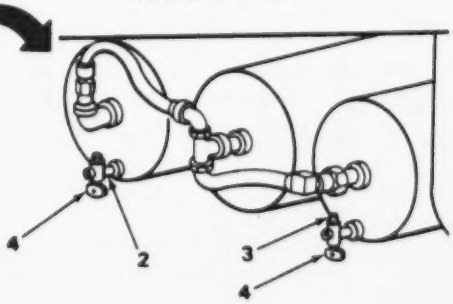
LOCATION	ITEM	ACTION / REMARKS
DRAINING MOISTURE FROM AIR SYSTEM		
1 Under cab left side of truck	Drain knob (1)	a. Pull out and allow air and moisture to blow out of system. b. Push in to stop.





2 Under cab right side of truck behind fuel tank	Two drain cocks (2) and (3)	a. Open by turning cock (4) 1/4 turn in either direction to allow air and moisture to be blown out of reservoirs. b. Close by turning cock 1/4 turn in either direction.





TASK ENDS HERE

TA220963

APPENDIX A
REFERENCES

A-1. SCOPE

This appendix lists all forms, field manuals, technical manuals, and technical bulletins referred to in this manual. Also listed are the publications indexes needed to keep up-to-date on latest changes and revisions of forms and manuals referenced in this manual.

A-2. FORMS

Equipment Inspection and Maintenance Worksheet	DA Form 2404
Recommended Changes to Equipment Technical Manuals	DA Form 2028-2
Hand Receipt	DA Form 2062
Quality Deficiency Report (Category II)	SF Form 368

A-3. FIELD MANUALS

Operation and Maintenance of Ordnance Material in Extreme Cold Weather (0° to -65°F/-15° to -54°C)	FM 9-207
Vehicle Recovery Operations	FM 20-22
Manual for Wheeled Vehicles	FM 21-305
Basic Cold Weather Manual	FM 31-70
Northern Operations	FM 31-71
Driver Selection and Training (Wheeled Vehicles)	FM 55-30

A-4. TECHNICAL MANUALS

Deep Water Fording of Ordnance Material	TM 9-238
Hand Receipt Manual Covering Basic Issue Items (BII) and Additional Authorizational List (AAL) for Truck Tractor, Commercial Heavy Equipment Transporter (C-HET) 85000 GVWR, 8x6, M911	TM 9-2320-270-10-HR
Semitrailer, Low Bed, Heavy Equipment Transporter, 60 Ton, M747	TM 9-2330-294-14
The Army Maintenance Management System (TAMMS)	TM 38-750

REFERENCES – CONTINUED

Cooling Systems: Tactical Vehicles	TM 750-254

A-6. LUBRICATION ORDERS

Lubrication Order-Truck Tractor, 85000 GVWR, 8x6, M911	LO 9-2320-270-12

A-7. PUBLICATION INDEX

Consolidated Index of Army Publications and Blank Forms	DA Pam 310-1

APPENDIX B

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

B-1. SCOPE

This appendix lists components of end item and basic issue items for the M911 Truck Tractor to help you inventory items required for safe and efficient operation.

B-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place the M911 Truck Tractor in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the Truck during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column (1) – Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

b. Column (2) – National Stock Number. This column indicates the national stock number assigned to the item and the number to be used for ordering items.

c. Column (3) – Description, FSCM, and Part Number, and Usable On code.

1. Description – Indicates the federal item name, and if necessary, a short description in parenthesis to help identify the item.

2. FSCM – Federal Supply Code for Manufacturer is a five digit code listed in SB 708-42 to identify manufacturer, distributor, or Government agency.

3. Part Number – Indicates the primary number used by the manufacturer to control design and characteristics of the item.

Section I. INTRODUCTION – CONTINUED

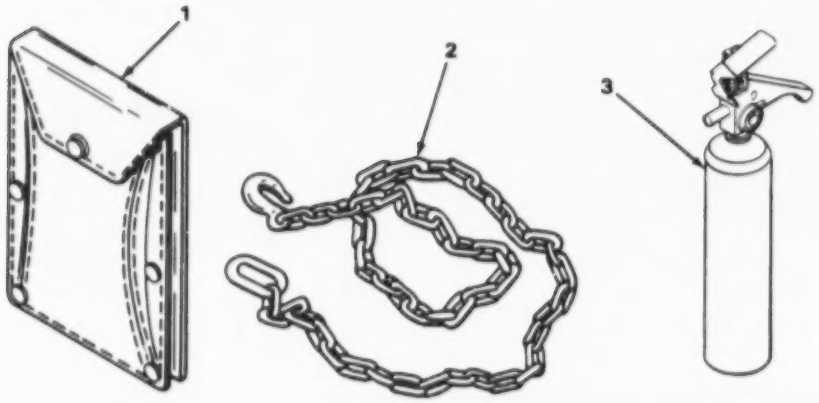
d. Column (4) – Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two letter abbreviation, such as, ea. for each.

e. Column (5) – Quantity Required (Qty Rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM

(None)

Section III. BASIC ISSUE ITEMS



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	(4) U/M	(5) QTY RQR
		SECTION II COMPONENTS OF END ITEM (None)		
		SECTION III BASIC ISSUE ITEMS		
1	2540-00-670-2459	Bag, pamphlet (in cab) (19207) 7961712	EA	1
2	4010-01-065-6239	Chain, utility, steel alloy, single leg, ¾ inch (19 mm) diameter links, 14 feet (4.3 m) long, w/one grab hook and two coupling links. (19207) 12250142-4	EA	1
3	4210-00-775-0127	Extinguisher, fire, hand, 10-B:C purple K dry chemical 5 lb (2.26 kg) (19207) 7015266	EA	1

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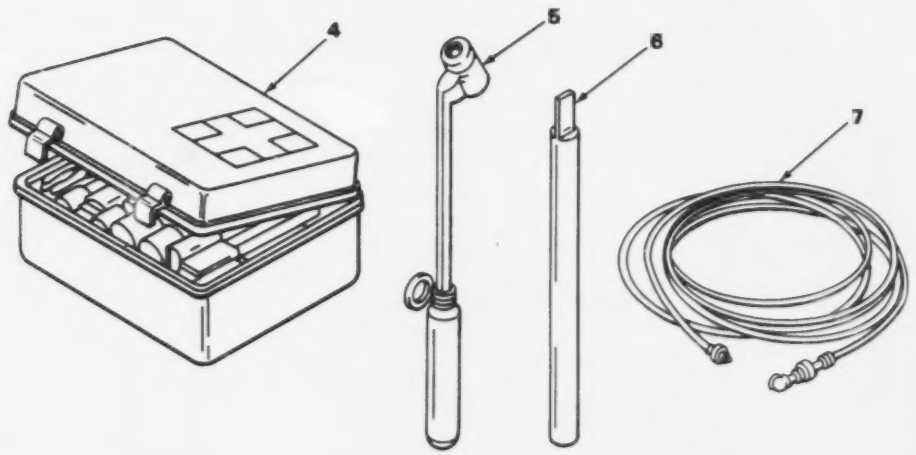
Section III. BASIC ISSUE ITEMS – CONTINUED



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	(4) U/M	(5) QTY RQR
4	6545-00-922-1200	First aid kit, general purpose, 12 unit (19207) 11677011	EA	1
5	4910-00-003-9599	Inflator, gage, pneumatic, tire pressure, self contained (10 psi to 120 psi/ 68-820 kPa) (19207) 7974576-1	EA	1
6	5120-00-243-2419	Handle, bar socket E (19207) 6196547	EA	1
7	4720-00-328-5422	Hose, assembly pneumatic, tire inflator, 40 feet (12.2 m) long, w/quick-disconnect coupling and necessary fittings (19207) 1624422-7	EA	1

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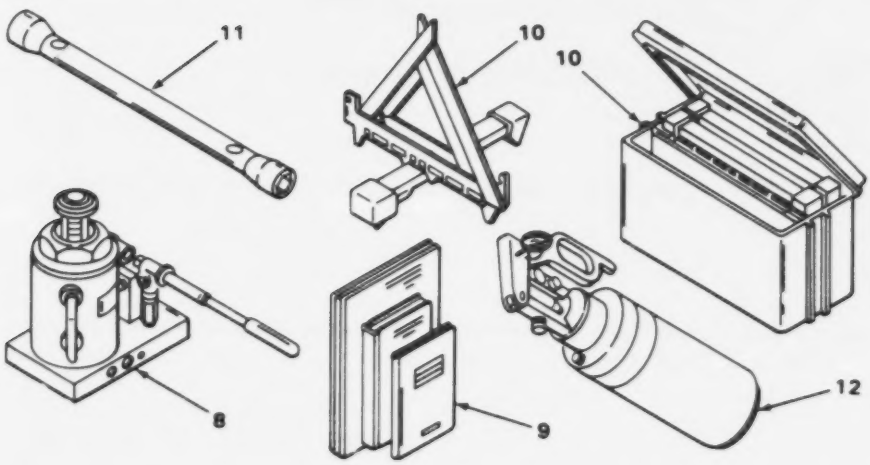
Section III. BASIC ISSUE ITEMS – CONTINUED



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	(4) U/M	(5) QTY RQR
8	5120-01-107-5724	Jack, hydraulic, 30 ton (27.2 t), w/ handle (81348) CF3011	EA	1
9		Publications, vehicle	set	1
10	9905-00-534-8376	Warning kit, highway, w/reflective triangles and plastic case (81348) SPEC-RR-W-1817	EA	1
11	5120-01-070-8386	Wrench wheel nut 29 inches (74 cm) long (45152) 1048TR	EA	1
12	4230-00-720-1618	Decontamination apparatus (81361) D5-51-269	EA	1

TA220966

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

C-1. SCOPE

This appendix lists additional items you are authorized for the support of the M911 Truck Tractor.

C-2. GENERAL

This list identifies items that do not have to accompany the M911 Truck Tractor and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

C-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM AND PART NUMBER	(3) U/M	(4) QTY AUTH
	MTOE		
5110-00-293-2336	Ax, sgl-bit, 4 lb (1.8 kg) hd wt, 35.5 in. to 36.5 in. (90 to 92.5 cm) lg (19207) 6150925	EA	1
5120-00-224-1389	Bar pry, 0.531 in. (13.44 mm) dia. 15 in. (40.6 cm) lg (72915) 8041183	EA	1
5510-00-491-0307	Block, hydraulic jack support, wood, 4 x 8 x 9 in. (102 x 203 x 229 mm) (19207) CPR 103023-2	EA	1
5510-00-491-0306	Block, hydraulic jack support, wood, 7 x 8 x 9 in. (178 x 203 x 229 mm) (19207) CPR 103023-1	EA	1

Section II. ADDITIONAL AUTHORIZATION LIST – CONTINUED

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM AND PART NUMBER	(3) U/M	(4) QTY AUTH
2510-00-741-2585	Board, hydraulic jack support, 2 5/8 x 24 x 24 in. (66 x 609.6 x 609.6 mm) (19207) 7417585	EA	1
2920-01-051-6680	Cable set, jumper (45152) 64547A	EA	1
7240-00-242-6153	Can, water, 5 gal (18.7 liter), steel (19207) 11699580	EA	1
2540-00-933-9023	Chains, single tire type, TS, 14-00-24/25, type OTR (96906) MS500055-28	EA	4
5120-00-224-4047	Hammer, hand, striking drilling 2 lb (0.9 kg) (78525) 314	EA	1
5120-00-288-6574	Handle, mattock-pick, 35.5 in. to 36.5 in. (90 to 92.5 cm) lg (80244) NN-H-93	EA	1
5120-00-222-4385	Mattock, pick type, 5 lb (2.28 kg) w/o handle (19207) 6101970	EA	1
5120-00-293-3309	Screwdriver, flat tip, 0.375 in. (9.525 mm) wide blade 10 in. (25.4 cm) lg (93389) 9643	EA	1
5120-00-293-3336	Shovel, hand, rd-pt d-hdl, short, size 2 (81348) GGG-S-326	EA	1
5120-00-240-1414	Wrench, adjustable, open end, single head, 18 in. (45.7 cm) lg (55719) D718	EA	1
2540-00-378-2012	Towbar: heavy duty (19207) 8383802	EA	1

APPENDIX D

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the M911 Truck Tractor. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. EXPLANATION OF COLUMNS

a. Column(1) – Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, App. D").

b. Column(2) – Level. This column identifies the lowest level of maintenance that requires the listed item.

C – Operator/Crew

c. Column(3) – National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column(4) – Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. Column(5) – Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	C		Detergent, GP, Liq, WS, A MIL-D-16791 (81349)	
		7930-00-282-9699	1 gal. (3.785 liters)	gal.
2	C		Distilled Water, ASC1 O-C-265 (81348)	
		6810-00-107-1510	5 gal. (18.925 liter) bottle	gal.
3			GAI MIL-G-23827 (18349)	
		9150-00-985-7247	5 lb (2.27 kg) can	
4	C		Grease, Automotive and Artillery GAA MIL-G-10924 (81349)	
		9150-00-065-0029	2-1/4 oz (63.78 gr) tube	oz
		9150-00-935-1017	14 oz (396.88 gr) cartridge	oz
		9150-00-190-0904	1.75 lb (0.795 kg) can	lb
		9150-00-190-0905	7.5 lb (3.405 kg) can	lb
		9150-00-190-0907	35 lb (15.89 kg) can	lb
5	C		Grease, General Purpose GGP MIL-G-23549B (81349)	
		9150-00-235-5555	1 gal. (3.785 liter) can	gal.
6	C		Lubricant, Cleaner and Preservative CLP MIL-L-63460B (81349)	
		9150-01-079-6125	15 oz (425.24 gr) can	oz
		9150-01-079-6126	3 oz (85.05 gr) can	oz
7	C		Methanol O-M-232 (81348)	
		6810-00-597-3608	1 gal. (3.785 liter) can	gal.
8	C		Oil, Fuel, Diesel DF-1 Winter VV-F-800 (81348)	
		9140-00-286-5286	Bulk	

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST – CONTINUED

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
9	C	9140-00-286-5294	Oil, Fuel, Diesel DF-2 Regular VV-F-800 (81348) Bulk	gal.
10	C	9150-00-234-5197	Oil, Lubricating, Exposed Gear, CW VV-L-751 (81348) 5 lb (2.27 kg) can	lb
11	O	9150-01-035-5390	Oil, Lubricating, Gear, Subzero GO 75W MIL-L-2105 (81349) 1 qt (0.946 liter) can	qt
12	C	9150-00-189-6727	Oil, Lubricating, OE/HDO 10 MIL-L-2104 (81349) 1 qt (0.946 liter) can	qt
13	C	9150-00-186-6681	Oil, Lubricating, OE/HDO 30 MIL-L-2104 (81349) 1 qt (0.946 liter) can	qt
14	C	9150-00-189-6730	Oil, Lubricating, OE/HDO 40 MIL-L-2104 (81349) 1 qt (0.946 liter) can	qt
15	C	9150-00-188-9864	Oil, Lubricating, OE/HDO 50 MIL-L-2104 (81349) 1 qt (0.946 liter) can	qt
16	C	9150-00-402-4478	Oil, Lubricating, OEA MIL-L-46167 (81349) 1 qt (0.946 liter) can	qt

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US Army Tank-Automotive Command
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Warren, Michigan 48090

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

TEMPERATURE

$5/9\,(^{0}F - 32) = {}^{0}C$

212^{0} Fahrenheit is equivalent to 100^{0} Celsius
90^{0} Fahrenheit is equivalent to 32.2^{0} Celsius
32^{0} Fahrenheit is equivalent to 0^{0} Celsius
$9/5\,C^{0} + 32 = F^{0}$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

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